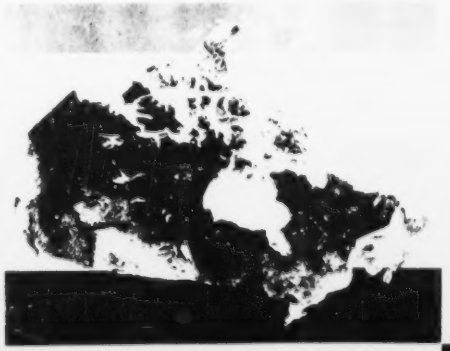
Quality of Life through Sustainable Resource Development

Final Report of the Natural Resources Canada Sustainable Development Strategy

December 10, 1997 – March 31, 2001



Natural Resources Canada / Ressources naturelles Canada — Canada

In 1997, Natural Resources Canada (NRCan) committed to work with Canadians to implement activities that will *"enable us to protect the health of the natural environment and landmass, while efficiently meeting human needs for energy, forest and mineral based products, and providing similar opportunities for future generations."* This commitment was NRCan's first Sustainable Development Strategy (SDS), **Safeguarding our Assets, Securing our Future**. The three-year strategy, tabled in Parliament on December 10, 1997, put forward 125 action targets.

This final report identifies the status of all action targets achieved through to March 31, 2001, and indicates how the action targets are helping to advance sustainable development – in other words, how incremental action is advancing the broader sustainable development yardsticks. You can find out more about the progress realized over the three-year period of SDS – **Safeguarding our Assets, Securing our Future** by reading the material on the attached CD-ROM.

What's Next

The second generation of sustainable development strategies was tabled in Parliament on February 14, 2001. The Natural Resources Canada **Sustainable Development Strategy – Now and for the Future** is a critical tool for moving the sustainable development agenda forward. In **SDS – Now and for the Future**, NRCan has articulated a *Vision of a Sustainable Future*, action commitments to advance sustainable development in the natural resources sector, and performance indicators to measure progress against the vision.

Read about our commitment to sustainable development – our results to date and future directions.

Key Highlights – SDS 1997

- Canadian Geospatial Data Infrastructure
- Criteria and Indicators of Sustainable Forest Management
- EnerGuide for Houses, Commercial Buildings Incentive Program and Energy Innovators Plus
- International Trade Missions led by Minister of Natural Resources
- Inventory of Mining Industry Practices to Conserve Wildlife and Habitat in Canada
- New Departmental Environmental Policy

Highlights of SDS – Now and for the Future

- Forest 2020
- A Proposed Framework for Collaboration in Groundwater Across Canada
- Counter-terrorism initiatives
- Action Plan 2000 on Climate Change
- Wastewater compliance evaluations at key NRCan facilities
- Work with partners to establish Canada's capacity for eco-efficiency

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The attached report is also available in hard copy by request, or on the Internet at www.nrcan-rncan.gc.ca/sd-dd.

FINAL REPORT

Natural Resources Canada

Sustainable Development Strategy

Safeguarding our Assets, Securing our Future

RAPPORT FINAL

Ressources naturelles Canada

Stratégie de développement durable

Protéger notre actif
Assurer notre avenir

Natural Resources Canada | Ressources naturelles Canada

Canada

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Minister's Message

Sustainable development — the integration of social, economic and environmental factors into our decision making — is a tremendous challenge, but also an exciting opportunity. In the natural resources sector, innovative new technologies are showing that it is possible to enhance productivity in our minerals and metals, forest, energy and geomatics industries without compromising the integrity of our natural environment. Indeed, by rising to the challenge of sustainable development, we open the door to social and economic benefits that will improve the quality of life of all Canadians.

Natural Resources Canada (NRCan), the first Government of Canada department to integrate sustainable development into its legislative mandate, has been a leader in responding to the challenges and opportunities of sustainable development. On December 10, 1997, the first Sustainable Development Strategy, Safeguarding Our Assets, Securing Our Future was tabled in Parliament. It is my privilege now to present the final report of that strategy, which covers the period December 10, 1997, to March 31, 2001.

This report highlights key accomplishments, such as the launch of GeoConnections, which provides national access to geographic information, stimulating innovation and strengthening capacity for decision making.

In addition to developing innovative programs at home, NRCan carried its message of sustainable development abroad by leading trade and investment missions to Argentina, Chile and Peru in November 1998, and to China, South Korea and Japan in January 2000. Canadian firms showcased their expertise during these missions in such areas as mining, geospatial information technologies, energy and forestry, and the sustainable management of natural resources.

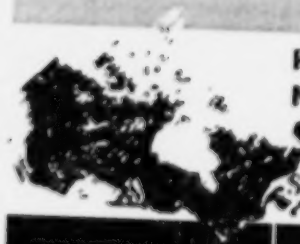
During an extensive consultation process on the next generation of sustainable development strategies, our stakeholders told us to go further. They wanted a bold strategy that drew on our past accomplishments, but which focussed on six key areas in which NRCan could truly make a difference. On February 14, 2001, my department delivered on this vision with Now and For the Future, the second Sustainable Development Strategy.

We are now making this vision a reality. As we do, we are using stringent performance indicators to measure our progress toward our new goals and objectives, and we are also helping develop national indicators for sustainable development. Through this process, NRCan is helping to improve accountability to all Canadians in this vital area.

103-03947/

Through our sustainable development strategies and the judicious balancing of our social, economic and environmental imperatives, Canada can lead the world as a model of sustainable development and ensure that our resources will contribute to our high quality of life — now and in the future.

Herb Dhaliwal



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Introduction

Sustainable development is often described as a journey, not a destination. Natural Resources Canada (NRCan) has a legislated responsibility for the sustainable development of Canada's natural resources. The Natural Resources Canada Sustainable Development Strategy ***Safeguarding our Assets, Securing our Future*** (SDS 1997) was tabled in Parliament on December 10, 1997. The strategy was a key tool for addressing sustainable development challenges at all levels: policy, science and technology, programs, legislation, regulations, and departmental operations, through a set of sustainable development goals, objectives and actions.

The purpose of this final report is to provide stakeholders with an account of the actions taken by the department over the period of SDS 1997, and how these actions contribute to broader efforts to advance sustainable development in Canada and abroad. As part of the department's commitment to reporting on our progress and to continuous improvement, NRCan published annual reports on progress in 1999, 2000 and 2001. This report consolidates these annual reports and provides a full description of how we feel that the completion of SDS 1997 has helped to advance sustainable development in the natural resources sector.

This report also provides an overview of the road ahead: the Natural Resources Canada ***Sustainable Development Strategy - Now and for the Future*** (SDS 2001). NRCan's second Sustainable Development Strategy, tabled on February 14, 2001, builds upon the successes from the first, as well as the lessons that were learned along the way.

Building the Foundation

SDS 1997 was recognized as a key tool to address sustainable development challenges at all levels: policy, science and technology programs, legislation/regulations and departmental operations. The Department's strong foundation for its SDS was critical to the success of

Safeguarding our Assets, Securing our Future. This foundation, which will continue to support NRCan's sustainable development strategy, is composed of three pillars: 1) stakeholder engagement; 2) performance measurement; and, 3) an effective management system.

Stakeholder Engagement
Since the first round of consultations held for the first SDS, NRCan has maintained an ongoing dialogue with stakeholders through progress reports, questionnaires to provide input and comments, a Web site with links to key documents and related work, and face-to-face multi- stakeholder meetings. Public engagement is a key component of the Department's ongoing approach to sustainable development and we are appreciative of the enduring level of interest and support demonstrated by stakeholders. NRCan will continue to seek the counsel of Canadians as the commitments made under ***SDS – Now and for the Future*** are implemented. The Department will further strengthen its partnerships with individual Canadians, environmental groups, industry associations, professional associations, academic institutions, private companies, other levels of government and other federal government departments.

Performance Measurement
From the outset, NRCan recognized that a consistent system to measure its performance would be critical to the implementation of the Department's 1997 Strategy. Consequently, the Department realigned its policy goals to match those in the Strategy and developed a single set of performance indicators to meet various reporting needs. The performance indicators, developed in consultation with stakeholders, enable NRCan to measure its performance against the objectives of its SDS. NRCan is now well positioned to report on this established performance measurement framework. These indicators form a vital component of our progress towards the Department's vision of a sustainable future. Performance indicators for SDS 1997 are included in this report, and the current performance measurement framework is in Appendix A.

Effective Management
NRCan uses leading-edge environmental management tools and practices to advance sustainable development through its own operations. It has strong support from senior management and its Sustainable Development Working Group. The Department employs a team approach to the development, implementation and monitoring of the SDS. Reviews of this management system are conducted to ensure accountability and results.

What the Tables Say

The following tables consolidate 3 previous progress reports, published in 1999, 2000 and 2001. Each of the tables, for the four goals of SDS 1997, list the target, the date it

was reported, and how it contributes to sustainable development. The table also highlights future directions for ***SDS - Now and for the Future*** that built upon successes of SDS 1997.

For more information on the commitments made in ***SDS - Now and for the Future***, please consult the SDS, located at http://www.nrcan.gc.ca/sd-dd

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Measuring Progress Towards Sustainable Development in Minerals and Metals

The development of criteria and indicators for minerals and metals is identified as a priority in the Minerals and Metals Policy of the Government of Canada. As a result, in its Sustainable Development Strategies, NRCan committed to establishing a conceptual framework for the development of sustainable development indicators for minerals and metals. Considerable progress has been made in this area.

Following, initial discussions on indicators for minerals and metals with the World Bank, the World Resources Institute, the U.S. Department of the Interior, the U.S. Geological Survey and Minerals and Energy Research Network in the United Kingdom, NRCan convened an international experts workshop in May, 1998, where participants from Japan, Chile, Australia and Canada representing industry, government, and academia discussed and shared experiences in the development of sustainable development indicators.

NRCan recognizes that the process of development is as important as the final outcome, since success will be measured by the degree of acceptance by all stakeholders of the indicators. Moreover, given that a number of initiatives are underway internationally to develop measures of our progress towards sustainable development, if Canada wishes to influence outcomes and participation of others, then we must develop a made-in-Canada approach. To this end, NRCan established and led a multi-stakeholder group to develop a values-based framework for the development of indicators of sustainable development, and a consensual process has been underway since May 1999 to develop a vision, goals, and objectives that capture the values shared by the working group members. Notably, a consensus has been achieved among participants on the specific wording for the vision, goals and objectives that will be used to consult more broadly. This values-based framework will provide the basis for the beginning of indicator development as outlined in NRCan's second Sustainable Development Strategy Now and for the Future.

Goal 1 – Making Better Decisions

Sustainable development is about making informed choices, in order to integrate social, economic and environmental aspects into the decisions that we make. NRCan provides access to leading-edge, high-quality and relevant data, information and knowledge, and facilitates and promotes its use.

Over the period of SDS 1997, NRCan embarked on a number of significant knowledge-related commitments. The success of these commitments led to new and expanded initiatives in ***SDS – Now and for the Future***, such as continued work on indicators for sustainable development and on-line access to NRCan information holdings as part of Government On-Line.

NRCan has been involved in the development of indicators to measure how Canada is advancing sustainable development at a number of scales. In SDS 1997, NRCan committed to develop indicators for energy, minerals and metals, and to report on indicators of sustainable forest management. The progress realized has established baselines and trends in the energy economy, to help track performance and aid in decision-making. In the minerals and metals sector, a values-based framework for the development of indicators of sustainable development, and a consensual process has been underway to develop a vision, goals, and objectives that capture the values shared by the working group members.

OBJECTIVE 1.1: Creating easily accessible and integrated knowledge on the state of Canada's landmass and natural resources, and the economic, environmental and social dimensions of their use.

#	Target	Date target reported	How this target advances sustainable development	Future directions
1.1.1	Launch a new Knowledge Initiative to better integrate and make publicly accessible its knowledge across the Department; by 1998, consult with stakeholders and complete an inventory of our knowledge holdings.	Mar 31/99	Helps manage, use and improve access to the departments information assets through an electronic, web-based knowledge infrastructure and software tools.	NRCan will help Canadians to make better sustainable development decisions by improving and increasing the electronic dissemination of natural resources data, information and knowledge. In ***SDS - Now and for the Future***, NRCan has committed to provide targeted knowledge and tools to inform decision makers through the Canadian Natural Resources Knowledge Gateway.
1.1.2	Develop the Canadian Geospatial Data Infrastructure (CGDI) to provide national access to geographic information, in partnership with provinces, territories, and other federal departments; by 1999, complete the NRCan portion of the CGDI.	Mar 31/00	Provides geographic information about sustainable development of Canada's natural resources to stakeholders and other government departments to stimulate innovation, build capacity for decision- making and promote sustainable development.	NRCan has developed access to significant geographic data holdings, and will further develop linkages with national and provincial/territorial information systems managed by other departments and levels of government to provide essential geographic

				data, tools and services to support enhanced decision-making, policy development, and integrated assessments.
1.1.3	Undertake the first national survey of energy use in commercial buildings; by 1998, finalize the design of the survey.	Mar 31/99	Provides for development of intensity indicators at sector and segment levels and a baseline for determining the energy and environment impact of new energy efficiency programs, the Commercial Building Incentive Program (CBIP) and Energy Innovators Plus.	To date, CBIP and Energy Innovators Plus programs have attracted over 600 applicants combined, with over 200 new projects underway. In ***SDS - Now and for the Future***, NRCan has committed to expanding the Energy Innovators Plus program in order to reduce GHG emissions from commercial sources and to increase awareness of energy use among Canadians.
1.1.4	Launch new reporting on the health of Canada's forest ecosystems; by 1998, publish the First National Forest Health Assessment.	Mar 31/99	Establishes the baseline on the health of Canada's forests in order to measure, assess and plan our progress towards the sustainable management of our forests.	NRCan's sustainable forest management initiatives will continue to enable improved decision making. The National Forest Information System, a commitment in ***SDS - Now and for the Future***, will ultimately enable the timely and authoritative measurement and reporting on the sustainability of Canada's forests.
1.1.5	By 2000, produce first report on Sustainable Management of Forests in Canada, to be tabled at the United Nations Commission on sustainable development on 15 April 2000.	Mar 31/01	Demonstrates Canada's continued commitment to sustainable forest management by disseminating knowledge on the state of Canada's forests to an international audience.	NRCan will continue to promote Canada's reputation for sustainable resource management through participation in international fora, and will demonstrate leadership internationally by transferring knowledge and technology.
	By 2000, identify values that are relevant to the environmental, social and economic impacts of the minerals and metals sector activities and products as a step to the development of credible sustainable development indicators.	Mar 31/00	Demonstrates Canada's continued commitment to sustainable mineral and metals development through the creation of indicators.	NRCan has committed in ***SDS - Now and for the Future*** to publish sustainable development indicators for energy by 2001 and for minerals and metals by 2003.
	By 1999, establish an	Mar	Demonstrates Canada's	

	historical data series on the energy economy to assist in the development of appropriate sustainable development indicators for the energy sector.	31/99	continued commitment to sustainable energy development through the creation of indicators.	

OBJECTIVE 1.2: Promoting greater national and international cooperation and consensus on sustainable development issues and actions.

#	Target	Date target reported	How this target advances sustainable development	Future directions
1.2.1	By 2000, undertake national dialogue on key natural resources sustainable development issues.	Mar 31/01	Encourages ongoing participation by Canadians in decision-making process.	NRCan's commitment to ongoing stakeholder engagement will continue to inform NRCan policy and programs, educate and inform stakeholders, build a shared sense of responsibility for sustainable development among stakeholders and the department.
1.2.2	By 1998, release National Forest Strategy (1998-2003) at National Forest Congress.	Mar 31/99	Promotes sustainable forest use and conservation through a plan of action which incorporates ecological, economic, social and cultural aspects.	A new National Forest Strategy (2003-2008) will be prepared, in consultation with stakeholders, building on the success of *National Forest Strategy (1998-2003) Sustainable Forests: A Canadian Commitment*.
1.2.3	By 1998, prepare, based on consultations with stakeholders, Canadian interventions for the second session of the Intergovernmental Forum on Forests, with DFAIT and CIDA.	Mar 31/99	Develops a Canadian position on key global forest policy issues by consulting with the provinces, territories, the Aboriginal community and non-government organizations, as well as with industry, labour and environmentalists. The IFF is a mechanism to promote global dialogue, cooperation and a greater consensus on forest development and management.	NRCan will continue to work with like-minded countries in multilateral fora, including the United Nations Forum on Forests and the Convention on Biological Diversity, to build consensus on a framework to further the implementation of internationally agreed upon action to achieve sustainable forest management at the national, regional and global levels.
	By 1999, convene, with DFAIT and CIDA, consultation sessions as part of Canada's preparations for the third session of the Intergovernmental Forum on Forests.	Mar 31/99		
	By early 2000, finalize, with DFAIT and CIDA, Canada's position for the fourth session of the Intergovernmental Forum	Mar 31/01		

	on Forests.			
1.2.4	By 1998, as directed by the Arequipa Declaration, organize and co-host, in cooperation with Latin American partners, a workshop on the Safe Use Principle.	Mar 31/99	Promotes international cooperation on the sustainable development of minerals and metals and the implementation of the Arequipa Declaration of the Mines Ministers of the Americas and Action Plan	Through various international fora such as CAMMA, APEC-GEMEED, and the International Study Groups, NRCan will continue to demonstrate leadership and to promote Canadian approaches to the sustainable development of minerals and metals. NRCan will additionally work to promote sustainable development in a broader context through continued efforts to establish a global dialogue on mining, minerals and metals in the World Summit on Sustainable Development.
	By 1998, organize and host a meeting of the APEC Group of Experts on Mineral and Energy Exploration and Development with the theme of sustainable development of minerals and metals.	Mar 31/99		

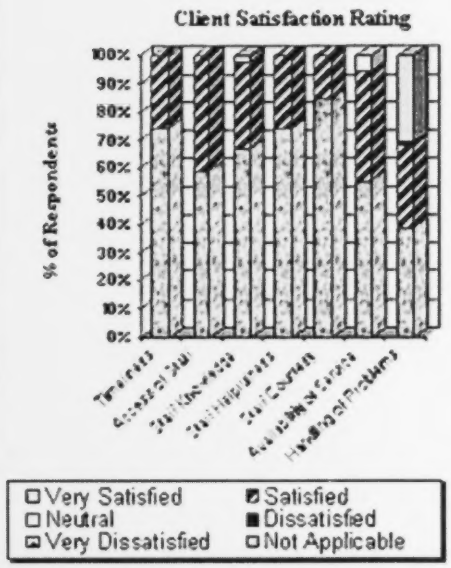
OBJECTIVE 1.3: Developing and promoting fiscal, regulatory and voluntary approaches that encourage the sustainable development of natural resources.

#	Target	Date target reported	How this target advances sustainable development	Future directions
1.3.1	By 1998, complete baseline study for energy sector with publication of: - Petroleum Fiscal Systems in Canada, - Tax Treatment of Electricity from Renewable Energy Sources and Energy Efficiency Technologies: an International Comparison	Mar 31/99	Identifies barriers and disincentives to sound environmental practices.	NRCan will continue to work with other government departments to develop and promote a mix of economic, regulatory and voluntary approaches that advance sustainable development. The priority for ***SDS - Now and for the Future*** is to analyze options for domestic emissions trading, in support of the Kyoto Protocol.
	By 1998, present to Canadian Council of Forest Ministers initial in-depth study of how current taxation policies and regulations in Canada affect the sustainability of private woodlots, and develop final recommendations to	Mar 31/99	Reports on in-depth studies of how current income tax policies in Canada affect the sustainability of private woodlots to assist in making well-founded recommendations to Ministers of Forests and, subsequently, Ministers of	In its 2001 Budget, the Government of Canada recognizes the impact of taxation on the sustainability of private woodlots. Currently, commercial woodlots owners are subject to income tax when they transfer their woodlots

	CCFM based on consultations with selected federal departments (ie, Finance, Revenue, and Agriculture and Agri-Food).		Revenue and Finance as appropriate. Changes in taxation could positively influence forestry practices in favor of sustainable forest management.	to their children. The budget proposes to ensure that the existing intergenerational tax-deferred for farm property is available for transfers of commercial woodlots after December 10, 2001, when they are operated in accordance with a prescribed forest management plan.
1.3.2	By 1998, establish a working group to examine options for a national system of tradeable permits for greenhouse gas emissions, with Environment Canada and others.	Mar 31/99	Recognizes good performers for their achievements in reducing greenhouse gas emissions and facilitates the reporting of progress.	As part of the approach to meet Canada's target of reducing greenhouse gas emissions by 6% below 1990 levels by between 2008 and 2012, NRCan will analyze options for domestic emission trading. The recognition of good performance in emissions reduction will be beneficial to companies financially through their leadership, and the environment through the reduction of greenhouse gas emissions. This forms part of Action Plan 2000, which will be fully implemented in 2003, and will bring Canada one third of the way to the reaching the targets of the Kyoto Protocol. NRCan will further promote voluntary stewardship through the Biodiversity Stewardship in Resource Industries initiative, to address the needs of Canada's species at risk and sustain biodiversity.
	By 1998 and 1999, provide financial support to the Conference Board of Canada study to assess the optimal mix and use of policy tools for environmental protection.	Mar 31/99	Designed requirements, aiding the implementation of domestic emission trading programs, reducing greenhouse gas emissions.	
	By 1998, prepare inventory of practices by mining and forestry to conserve wildlife and habitat.	Mar 31/99	Promotes the dissemination of information on practices that help to conserve wildlife and habitat, and encourages industry to improve its practices.	
1.3.3	Report to federal and provincial mining ministers on a national review to improve regulatory system related to mining by 1998.	Mar 31/99	Provides the opportunity for multi-stakeholder groups to express their views on how to improve the efficiency and effectiveness of the regulatory system related	NRCan will work with all stakeholders to develop proposals for alleviating any perceived or actual adverse effects of the current regulatory regime on the

			to mining.	exploration and mining industries in Canada, and to promote the development of a regulatory climate for minerals and metals which provides long-term stability and predictability for Canadian industry.
1.3.4	By 1998, obtain approval from the Council of Energy Ministers on the Energy Chapter of the Agreement on Internal Trade.	Mar 31/99	Increases the efficiency of the electricity markets across Canada.	Outstanding trade related issues are currently under negotiation by Trade Ministers. Once concluded, Energy Ministers will likely review by the next Council of Energy Ministers in 2002.
1.3.5	By 1999, provide guidance and expertise to DFAIT as needed in order to support them in their participation in international negotiations to develop an international seabed mining code.	Mar 31/00	Ensures that sustainable development remains an underlying goal for the international sea bed mining code.	NRCan will continue to contribute to sound environmental and social decision-making by generating and providing state-of-the-art information on Canada's sea bed resources
	By 1999, prepare maps and reports that describe the potential outer limits of the judicial continental shelf of Canada's Arctic and Atlantic coasts, identifying gaps and weaknesses in the database that need to be rectified with systematic surveys or related field work.	Mar 31/00	Identifies the limits of the area that could potentially come under Canadian jurisdiction, once Canada ratifies the Law of the Sea, and identify the new data requirements to strengthen the Canadian request, with the intent to ensure the sustainable development of natural resources in that area.	

Goal 1, Objective 1.1 **User satisfaction with the Canadian Spatial Reference System. Reported in 2000-01. Under NRCan's current Performance Measurement Framework, this item is Goal 4, Objective 4.2.**	
	NRCan's Contribution The Canadian Spatial Reference System (CSRS) enhances NRCan's service to the natural resources sector and a multitude of other sectors as a component of national standards, serving as the foundation of highest accuracy for spatial positioning throughout Canada:



• NRCan's Geodetic Survey Division leads the Canadian Geodetic Reference System Committee, a collaboration of provincial/ territorial agencies and principal driver for decisions related to the CSRS.

• Global compatibility is assured through NRCan's participation and leadership roles in the International GPS Service and the International Intercomparison of Absolute Gravimeters, and acceptance of the Algonquin and Yellowknife Radio Observatories into the International Very Long Baseline Interferometry Service.

• From engineering works and navigation to environmental science and climate change studies, the CSRS serves as a framework for knowledge- based decisions, with direct application to location commerce and a growing list of disciplines.

What Does the Graph Mean?

• These graphs depict key results of a monthly Client Satisfaction Survey of direct clients (contact by telephone, fax or in person) of NRCan's Geodetic Survey Division, taken over 6 months.

• Respondents are located throughout Canada and are drawn from industry (62%), provincial (16%), and federal government agencies (17%), academia (3%), and other stakeholders (2%).

• Clients appreciated the service received; all were satisfied with the service.

• Most highly rated was the timeliness for response to requests for information related to Geodetic Survey's GPS corrections & tracking station data, traditional vertical & horizontal survey control data, publications, software, etc.

• Individual suggestions for improvement will influence internal planning. For example, a number of clients recommended making additional information available on-line. Easily implemented improvements were actioned quickly.

What's Next?

• Service improvements based on future surveys, using the same core questions as baseline, aim to achieve the Government's target of a minimum 10% increase in client satisfaction by 2005.

An action plan, based on this and another survey of provincial stakeholders, is in progress. This includes easier online access to more geodetic data and powerful online positioning applications.

Advances in technology will drive the reactions of a rapidly evolving client base, implicating the following key actions:

- Improve the robustness of the infrastructure for GPS Corrections in support of the provincial, federal and territorial collaboration for distribution via the Canada- wide DGPS initiative;

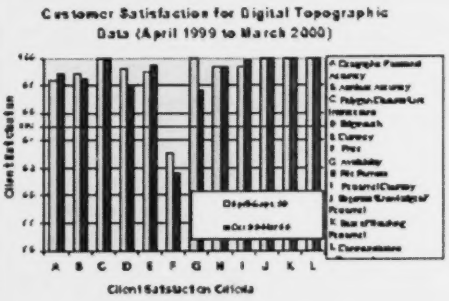
- Focus on Space Geodesy as the CSRS core, with accurate positioning applications extending to natural hazards and meteorology, among others;

- Increase the capacity of the North as a partner in the CSRS, including improvement of the vertical reference system, to participate in benefits. comparable to those available in southern Canada.

• NRCan will continue to monitor the satisfaction

	of clients using these services.

Goal 1, Objective 1.1
User satisfaction with relevance, accessibility and quality of information. Reported in 1999-2000.


Customer Satisfaction for Digital Topographic Data (April 1999 to March 2000)
Client Satisfaction
A B C D E F G H I J K L
Client Satisfaction Criteria

NRCan's Contribution

• NRCan recognizes the value in measuring, monitoring and reporting on client satisfaction performance. The Digital Topographic data indicator is put forward as a positive example – for the current document – of how systematic measuring, monitoring and reporting on client satisfaction performance is taking place within the department. It is considered to be representative of the kinds of client satisfaction measurement and reporting initiatives that NRCan is pursuing. •NRCan is currently exploring the issues associated with measuring and reporting on overall customer satisfaction in a department characterized by diversity and substantial workload.

• In areas where satisfaction levels are below 95%, NRCan ensures that client feedback is integrated into revisions and/or upgrading of product development and service delivery.

• ResSources/Government On-Line

What Does the Graph Mean?

The graph illustrates the level of client satisfaction with one of the NRCan products/services – 'Digital Topographic Data' – as measured for two time periods (April-Sept. '99 and Oct. '99 to March '00) against 12 criteria*. The solid line running across the graph at the 95% level represents the client satisfaction target for this product/service.

The graph shows that client satisfaction levels have been relatively high, with slight variations, against all criteria (92-100%) for both time periods. It indicates that the level of performance has been very strong in relation to 'Product Currency' (98-99%), 'Availability' (98-100%), 'Personnel Expertise and Knowledge' (99-100%) and 'Communication' (100%). Satisfaction levels have been somewhat lower against the criteria of 'Price' (92%), below the 95% target.

These data are comparable to the results of previous annual (1994-1998) and periodic (1998-1999) surveys, which consistently

Next Steps

• NRCan is pursuing continuous improvement in the area of client satisfaction performance measurement, reporting and monitoring.

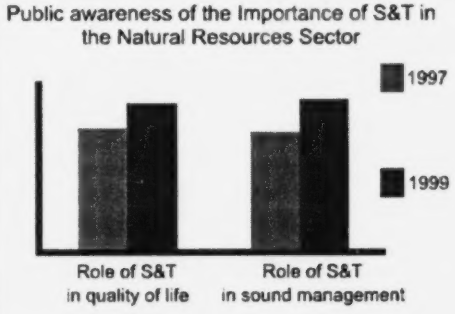
• Through ResSources, NRCan will be developing service standards for electronic service delivery.

• The data example points to areas for improvement relative to established target levels. In the case of client satisfaction with product price, NRCan is addressing issues such as cost recovery and pricing guidelines that have contributed to the gap between the target and actual scores.

• NRCan is examining options for developing common, umbrella, or "roll-up" client satisfaction performance measurement tools that can be used to provide a better understanding of overall satisfaction with departmental products and services.

displayed satisfaction levels over 95%. Past satisfaction levels regarding Price have also been slightly lower than those associated with other criteria.	• Once this feasibility assessment is complete, recommendations will be made with respect to the most suitable path forward in this area of performance measurement and, if required, a project plan will be developed. • As a federal lead on S&T, NRCan will develop an e-cluster focused on sustainable development in support of Government On-Line.

Goal 1, Objective 1.1
Public awareness of the importance and relevance of the natural resources sector, its issues, and NRCan's science and technology. Reported in 1998-99.


Public awareness of the Importance of S&T in the Natural Resources Sector
1997
1999
Role of S&T in quality of life
Role of S&T in sound management

NRCan's Contribution

• NRCan is Canada's major national repository of expertise related to energy, forest and mineral and metals resources as well as to the earth sciences. For example, NRCan contributes to innovation and economic growth, supports wealth creation in remote and northern communities and obtains information and shares knowledge on mitigating the impact of natural hazards such as earthquakes, landslides, etc.

• NRCan plays a significant role in promoting the sustainable development of Canada's natural resources through for example, the assessment of resources, the protection of the environment and biotechnology research in forestry

What Does the Graph Mean?

• A majority of Canadians believe that science and technology plays either a very or an important role in providing a good quality of life and in ensuring the sound management and the sustainable use of Canada's natural resources.

• There is an increasing proportion of Canadians who believe that science and technology plays a significant role in the economy, the environment and in their everyday lives.

What's Next?

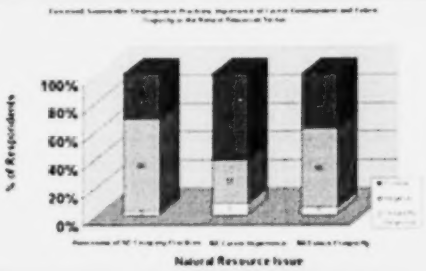
• NRCan will continue to promote its activities and the results of its science and technology efforts to the public, decision-makers, the media, and the research community at large.

• Follow-up tracking survey will be done in 2000-01.

• NRCan will continue its S&T work with the forest, minerals and metals, energy and earth sciences sectors to maximize economic and social benefits while safeguarding the environment.

Goal 1, Objective 1.1
Public awareness of the importance and relevance of the natural resources sector, its

issues, and NRCan's science and technology. Reported in 2000-01.



NRCan's Contribution

• NRCan has been working dilgently tin creating an awareness among the public of the importance of the natural resoruces sector to Canada

• The Minister of NRCan has developed a sustainable development vision for the natural resources sector in which S&Tand innovation form a central core.

• In 2000/2001 NRCan consulted with over 2000 Canadians on the sustainable development of our natural resources and raisid awareness on corporate social responsibility in the resource sector through supplements in Maclean's magazine.

• NRCan has been working at the program level through, for example, the Biodiversity Resource Stewardship Initiative and the Energy Innovators Program and the First Nations Forestry Program, to address the SD practices fo companies and career possibilities.

What Does the Graph Mean?

• The first bar in the graph indicates Canadians perception of the sustainable development practices of companies in the natural resources sector. 32% of respondents indicated that they believe Canada's natural resources companies practice sustainable development.

• The second bar indicates Canadians recommendations for a career in the natural resources sector. 61% indicated that a career in the Natural Resource Sector would be an excellent choice.

• The third bar indicates Canadians perceptions of the role of the natural resources sector in Canada's future prosperity. 39% feel that the natural resources industry will be a primary source of future prosperity for Canada.

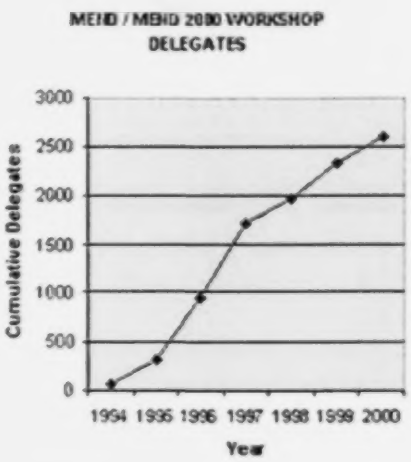
What's Next?

• Canadians are very favourable to the federal government playing a role that carries out scientific research so that wise resource development and use is encouraged. Further examination of this role and its evolution in the future is important.

• Further reporting and monitoring of public awareness on various S&T and natural resource issues.

Goal 1, Objective 1.2
Participation in, and influence on, national and international multi-stakeholder approaches to sustainable development issues. Reported in 2000-01.

NRCan's Contribution



• The Mine Environment Neutral Drainage (MEND) Program was the first international multi-stakeholder initiative to develop scientifically-based technologies to reduce the effect of acidic drainage.

• The original MEND Program extended over a nine-year time frame ending in 1997, with technology transfer activities continuing to the end of 2000 under the MEND 2000 program.

• MEND and MEND 2000 have been described as a model way for governments, industry and non-governmental organizations (NGOs) to cooperate in technology development.

• A toolbox of technologies is now available to open, operate and decommission a mine property in an environmentally acceptable manner.

• MEND has established Canada as the recognized leader in research and development on acidic mine drainage.

• An evaluation of MEND concluded that the estimated liability of five mine sites alone had been reduced by $340 million.

What Does the Graph Mean?

• Acidic drainage has long been recognized as the largest environmental liability facing the Canadian mining industry, and to a lesser extent, the public through abandoned mines.

• Acidic drainage is the result of a natural oxidation process whereby sulfur-bearing minerals oxidize upon exposure to oxygen and water. The net result is the generation of metal-laden effluents of low pH that can potentially cause damage to ecosystems in the downstream environment.

• The dissemination of information, to the MEND partners and the public, regarding developed technologies, is a major function of the program.

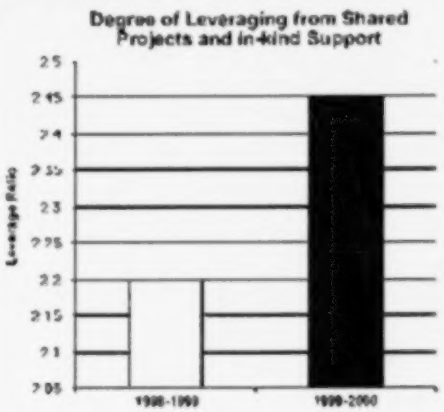
• MEND hosts several workshops per year on key areas of technology at various locations across Canada. These workshops have been the vehicle of choice to transfer the available information to the users. As indicated by the graph the workshops have been successful in disseminating this information, with over 2500 delegates attending workshops in 2000.

What's Next?

• Although the MEND 2000 program ended in December 2000, members of the MEND 2000 Steering Committee recommended that a renewed national acidic drainage research program, referred to as MEND3, be launched in 2001.

• MEND3's primary objective will be to provide leadership to research on acidic drainage both within Canada and abroad.

Goal 1, Objective 1.2
Degree of leveraging by NRCan from shared science & technology projects. Reported in 1999-2000.



NRCan's Contribution

NRCan places great importance on partnering, not solely for sharing costs but also as an indication of the relevance of its activities. Leveraging is obtained from four mechanisms as defined in the Framework for Revenue Generation: 1) Cost-shared projects involve NRCan and partner(s) jointly funding work undertaken solely by a third party; 2) Task-shared projects involve NRCan and partner(s) each funding and undertaking their part of a project; 3) Joint projects involve NRCan and partner(s) undertaking and funding work, in which money may change hands; and, 4) In-kind support, is payment in goods or services rather than cash and the informal support to NRCan programs that is received from clients.

In-kind support is difficult to quantify; but the toolkit that accompanies the Framework for Revenue Generation includes a recommended process for assessing the value of such informal support in a consistent manner.

What Does the Graph Mean?

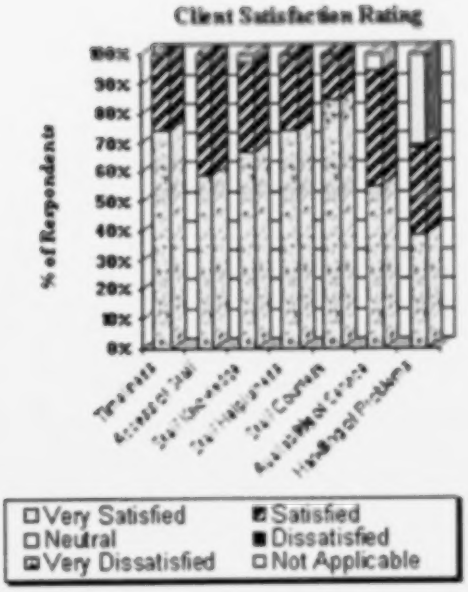
In 1997 NRCan implemented its Framework for Revenue Generation, External Funding and Collaborative Activities, which established a common set of guiding principles and terminology that enabled NRCan to identify and quantify leveraged funds in a consistent manner. Data were collected in a consistent fashion starting in 1998-99.

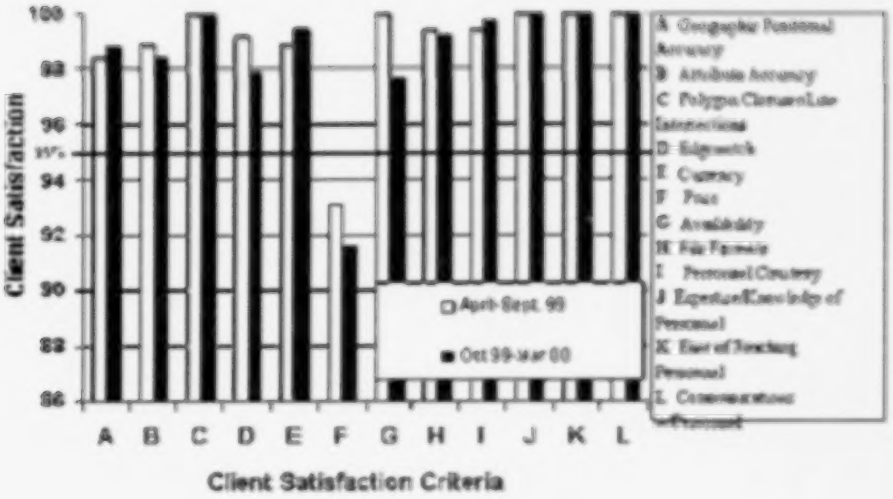
Leveraging increased from 2.20 in 1998-99 to 2.45 in 1999-00. This represents a degree of external support on shared projects and programs. Actual investments in shared undertakings increased by 2% for NRCan and 13.8% for partners. The actual dollar value of leveraged support may vary significantly from year to year depending on the scope and nature of the shared activities. It may, for example, be significantly higher in a year in which a single short-term multi-million dollar shared project is undertaken.

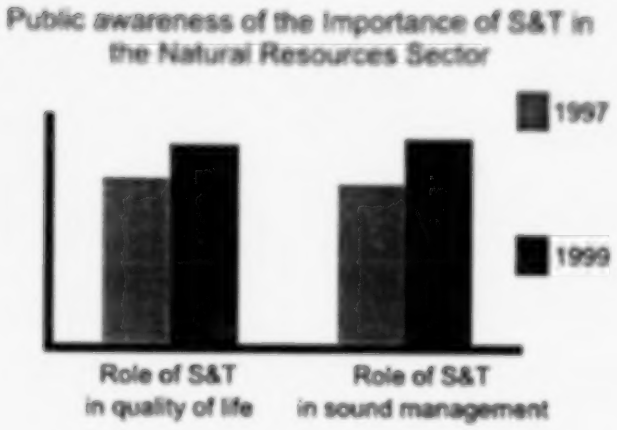
What's Next?

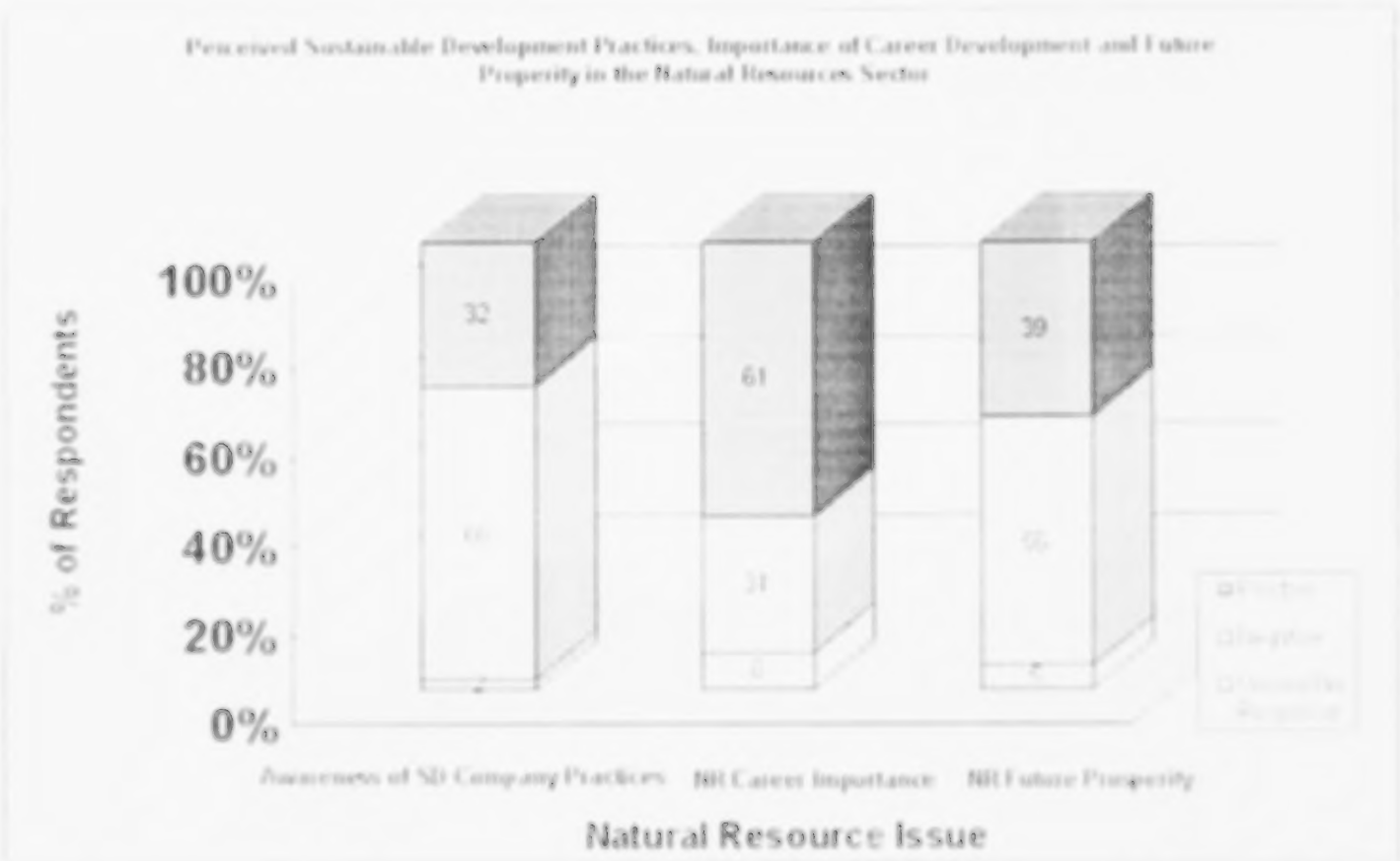
NRCan will strive to enhance its leveraging capabilities through multi-partner, multi-stakeholder mechanisms and programs such as the Climate Change Action Fund, the Sustainable Development Technology Fund, the Canadian Lightweight Materials Research Initiative (CliMRI), its Mine Automation Program, and its Resource Innovation Action Plan, in which multi-partnering is entrenched as a fundamental operating principle.

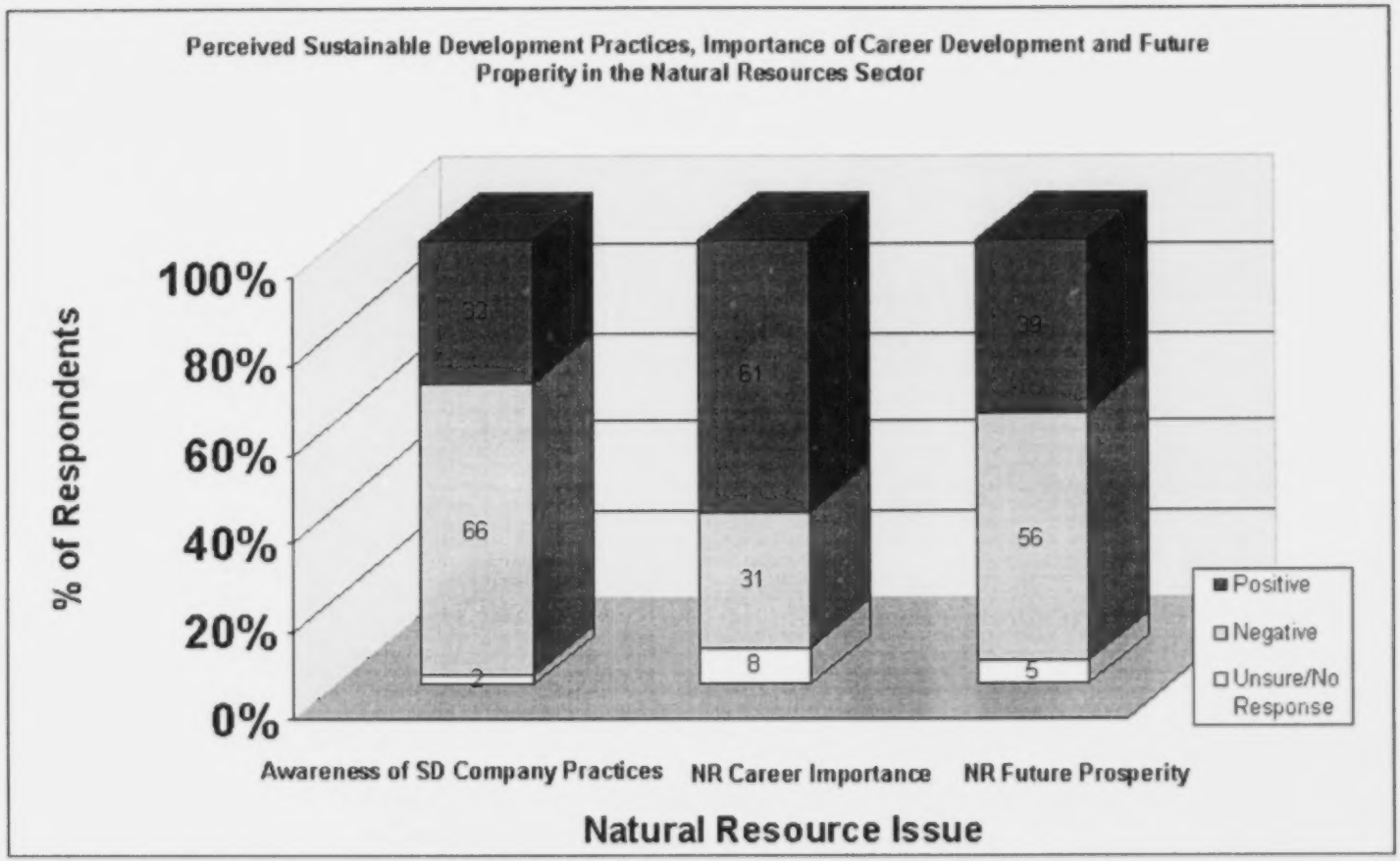
These efforts will involve partnerships with a wide range of other performers - other federal departments and agencies, provincial departments and agencies, the private sector, non-government organizations and international organizations.

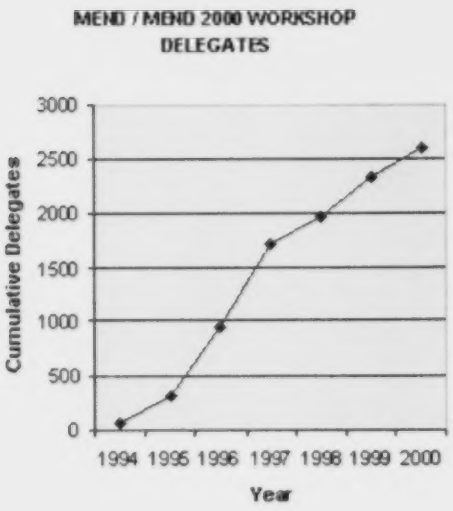

Client Satisfaction Rating
% of Respondents
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Very Satisfied
Satisfied
Neutral
Dissatisfied
Very Dissatisfied
Not Applicable

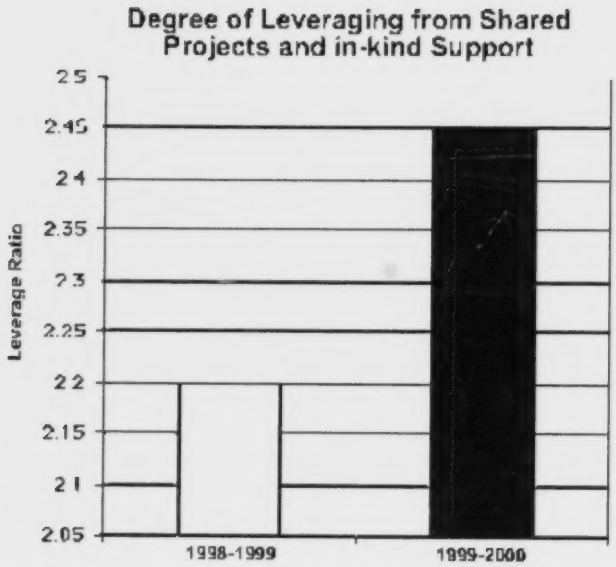

Client Satisfaction
100
98
96
94
92
90
88
A B C D E F G H I J K L
Client Satisfaction Criteria
April-Sept. 99
Oct 99-Mar 00
A Geographic Positional Accuracy
B Attribute Accuracy
C Polygon Closure/Line Intersections
D Edgematch
E Currency
F Price
G Availability
H File Formats
I Personnel Courtesy
J Expertise/Knowledge of Personnel
K Ease of Teaching Personnel
L Communications


Public awareness of the importance of S&T in the Natural Resources Sector
1997
1999
Role of S&T in quality of life
Role of S&T in sound management


Perceived Sustainable Development Practices, Importance of Career Development and Future Prosperity in the Natural Resources Sector
% of Respondents
100%
80%
60%
40%
20%
0%
32
61
39
Natural Resource Issue


Perceived Sustainable Development Practices, Importance of Career Development and Future Properity in the Natural Resources Sector
% of Respondents
100%
80%
60%
40%
20%
0%
32
66
2
61
31
8
39
56
5
Positive
Negative
Unsure/No Response
Awareness of SD Company Practices
NR Career Importance
NR Future Prosperity
Natural Resource Issue


MEND / MEND 2000 WORKSHOP
DELEGATES
Cumulative Delegates
3000
2500
2000
1500
1000
500
0
1994 1995 1996 1997 1998 1999 2000
Year


Degree of Leveraging from Shared Projects and in-kind Support
Leverage Ratio
2.5
2.45
2.4
2.35
2.3
2.25
2.2
2.15
2.1
2.05
1998-1999
1999-2000

Goal 2 – Enhancing Long-term Social and Economic Benefits

Canada has been blessed with an abundance of natural resources that provide social, economic and environmental benefits to Canadians and the world. Natural Resources Canada has an important role in ensuring the stewardship of these resources, so that present and future generations may continue to enjoy the benefits.

To this end, NRCan committed to such actions as the promotion of greater value-added of Canada's natural resources, the development of new technologies, improvement of Canada's trade and investment, and building capacity in resource-based communities. New commitments have been made in ***SDS - Now and for the Future*** to further promote innovation in resource development, to increase market access for Canadian resource-related industries, promote international business development, and to enable communities to practice sustainable natural resource management.

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OBJECTIVE 2.1: Creating economic opportunities and encouraging investment in innovative and higher-value uses of natural resources.

#	Target	Date target reported	How this target advances sustainable development	Future directions
2.1.1	By 1998, publish issues on value-added processing in the minerals and metals sector with Industry Canada and conduct stakeholder consultations.	Mar 31/99	Promotes greater value-added processing of Canada's minerals and metals.	NRCan is helping to transform CanadaÕs natural resources industry into one of the most productive, sophisticated and environmentally-friendly in the world through investments in science and technology and transfer of knowledge and expertise. For ***SDS - Now and for the Future***, NRCan has committed to promote innovation in resource development through policy and scientific research.
	By 1999, publish consultation report on challenges facing value-added activities in the mineral products industry.	Mar 31/99	Helps integration of economic, environmental and social considerations in decisions related to value-added activities.	
	By 1999, develop sectoral initiatives to promote value- added activities for minerals and metals sector in partnership with Industry Canada, and other departments and provincial governments.	Mar 31/00	Promotes cooperation between Departments in order to establish sustainable development for the minerals and metals sector.	
	Prepare annual reports to	Mar	Increases awareness and	

	the consortium on natural gas processes.	31/01	promotes innovative practices.	
	By 1999, develop a strategy to increase value-added for Canadian forest products.	Mar 31/00	Promotes Canadian forest products internationally by building a stronger domestic economy through the creation of jobs and expertise in this field.	
2.1.2	By 1998, conduct an external review of NRCan's tree biotechnology research.	Mar 31/99	Encourages the growth of industries using innovative and environmental technologies for natural resource development.	NRCan will continue to generate knowledge and explore biotechnology applications to improve forest regeneration and protection methods, while ensuring that environmental impact considerations are addressed. For ***SDS - Now and for the Future***, NRCan has committed to undertake science and technology to reduce environmental impacts: scientific support for climate change, international forest health and policy issues, Canadian forest biodiversity issues and criteria and indicators of sustainable forest management.
	By 1998, lead an interdepartmental forest working group to carry out consultations on forest biotechnology issues.	Mar 31/99	Implements a federal strategy on forest biotechnology, including technology transfer and use of biotechnological-engineered forest products, for testing less chemical dependent, more pest-resistant seedlings.	
	By 1998, submit to the Poplar Council of Canada a proposal to establish a Canadian Poplar and Aspen Genetics and Biotechnology Cooperative.	Mar 31/99	Reduces pressures placed upon Canada's natural forests by planting fast growing species such as poplar.	
	By 1998, contribute to the policy framework for the renewed Canadian Biotechnology Strategy.	Mar 31/99	Encourages the growth of industries using innovative and environmental technologies for natural resource development.	
	By 1998, conduct a survey of key stakeholders on the potential for a national strategy to promote greater recycling of metals.	Mar 31/99	Promotes greater recycling of metals, in consultation with other departments, industries, provinces and municipalities.	NRCan, in partnership with other government departments, provincial governments, municipalities and industry, will lead a Canada-wide initiative to increase material recovery and conservation, reduce energy and landfill burden, and promote public awareness of recycling.
	By 2000, analyze the links and opportunities between environmental	Mar 31/01	Promotes economic opportunities and an awareness of	In ***SDS - Now and for the Future*** NRCan committed to work with

	industries and the resource sector.		environmental technologies for natural resource development.	partners to establish Canada's capacity for eco-efficency, to ensure that the proper techniques and tools are made available to enterprises in the natural resources sector to facilitate the adoption of eco-efficient practices.
2.1.3	By 2000, develop new technologies and incremental improvements to existing technologies in oil sands and heavy oil, extraction and processing, and upgrading.	Mar 31/01	New and improved technologies related to dry landscape tailings, froth treatment, low energy extraction, field upgrading, coking, catalysis and commercial demonstration of the CANMET hydrocracking have all contributed to more sustainable heavy oil and oil sands production in Canada.	In ***SDS - Now and for the Future***, NRCan committed to continue to work towards reduced environmental impact of bitumen and processing, and of offshore heavy oil and natural gas production, to ensure that energy contributes to socio-economic growth while minimizing risks to the environment.
2.1.4	By 1998, obtain funding approval from the Canada- Newfoundland Offshore Development Fund for: • The establishment of an evacuation training facility in St. John's. • A training project related to the production phase of offshore oil and gas development in Newfoundland. • An employment equity training program promoting female participation in non-traditional jobs. • Ongoing participation on the Newfoundland and Nova Scotia Benefits Committees for the review of benefits activities and enhancement of job creation and promotion of economic development.	Mar 31/99	Protects offshore and frontier environments. Assures qualified Canadians the opportunity to take advantage of this emerging resource area and that Canadian companies are provided with "full and fair" opportunity to participate on a competitive basis in supplying goods and services to offshore oil and gas projects. -The training facility is operational. NRCan is working with industry to identify needed skills to develop a training program. -An employment equity training program operational. -Participation in the Newfoundland and Nova Scotia Benefits Committees is ongoing.	NRCan will continue to ensure that natural resources development contributes to socio-economic growth - including programs to build capacity in local communities - while minimizing risks to the environment.
	By 2000, • Publish in the Canada	Mar 31/01		

	Gazette Part I, the revised Offshore Safety Regulations. • Publish in the Canada Gazette Part II, Omnibus Amendments to regulations in response to comments received from the Standing Joint Committee for the Scrutiny of Regulations. • Draft regulations for: combined Drilling, Production and Conservation; update Diving; Offshore Installation Manager; Offshore Pipeline; Certificate of Fitness; and consequential amendments to related regulations.			

OBJECTIVE 2.2: Maintaining and expanding access to international markets for Canadian resource-based products, knowledge, technologies and services.

#	Target	Date target reported	How this target advances sustainable development	Future directions
2.2.1	By 2000, the Minister of Natural Resources will lead two Team Canada international trade missions.	Mar 31/01	Addresses market barrier concerns associated with stewardship and conservation while encouraging improvement of Canada's international trade and investment position.	NRCan will expand its efforts to promote international business development, by undertaking trade missions, establishing specialists in targetted embassies to help Canadian natural resource companies, and by implementing a new Trade and Investment Strategy.
2.2.2	By 1998, provide technical training on acid mine drainage and life cycle assessment, and advice on ISO 9000 accreditation for the Canada-Brazil Project for Sustainable Development on the Minerals Sector.	Mar 31/99	Promotes sustainable development of minerals and metals internationally and showcases Canadian technologies and expertise in environmental management.	For ***SDS - Now and for the Future***, NRCan will undertake new bilateral and multilateral engagement to address regulatory and policy initiatives, and encourage trade liberalization in the minerals and metals industry, the forest products sector, and the energy sector, to contribute to sustainable
	By 1999, provide baseline assessment and technical training in chemical	Mar 31/99		

	analysis and environmental management, and by showcasing Canadian technologies and expertise for the Canada-Argentina Project for Technology Transfer in the Minerals Sector.			development at home and abroad.
	By 1999, develop internationally-recognized protocols for heavy metals and the classification of risks posed by persistent organic pollutants.	Mar 31/00	Ensures that hazards for metals are identified and that control measures are put into place.	For ***SDS - Now and for the Future***, NRCan will conduct scientific research on the behaviour/effects of metals released to the environment.
	By 2000, negotiate provisions for the sound management of minerals and metals in the "Prior Informed Consent Convention" and the UNEP- sponsored global convention on 'persistent organic pollutants.'	Mar 31/01	Supports international awareness of persistent organic pollutant issues in the minerals and metals sector.	
2.2.3	Over the period from 1997 to 1999, provide financial support to Forintek Canada for codes and standards research.	Mar 31/00	Increases international acceptance of Canadian wood standards and products as a sustainable alternative to other building materials.	NRCan will continue to support research to address codes and standards issues to promote the use of wood products as a sustainable alternative to other building materials.
2.2.4	By 1998, host technical forestry missions from the United States, Austria, United Kingdom, Germany and Holland, under CCFM-International Forestry Partnerships Program.	Mar 31/99	Promotes Canadian forest policies and practices, and corrects misinformation by providing complete, timely and authoritative information, and ensures that trade barriers are not erected.	NRCan will continue to provide leadership and share Canadian sustainable development practices internationally.
	From 1998 to 2000, possible participation of Canadian experts to the series of fora entitled World Forum on Forests (part of World Exposition 2000, Hannover, Germany).	Mar 31/01	Unfortunately, the fora were not held.	
2.2.5	By 1998, develop International Business Strategy for Earth Sciences Sector.	Mar 31/99	Supports and promotes the geomatics and geoscience industry's access to international contracts and markets.	International markets continue to be an important source of business for the geomatics and

	By 1999, begin implementing action items from the ESS International Business Strategy.	Mar 31/00		geoscience industry. NRCan will expand efforts to promote international business development, to advance sustainable development at home and abroad through expanded export of products, services and technologies developed by the resource-related industries.
2.2.6	By 1998, take the lead to establish and chair the APEC Steering Group on Energy Standards.	Mar 31/99	Encourages the harmonization of testing methods for energy efficiency standards and promotes best practices in energy regulation; negotiated lower tariffs and eliminated unsound non-tariff barriers to trade and investment of natural resources.	For ***SDS - Now and for the Future***, NRCan will undertake new bilateral and multilateral engagement to address regulatory and policy initiatives, and encourage trade liberalization in the minerals and metals industry, the forest products sector, and the energy sector, to contribute to sustainable development at home and abroad.
	By 1998, initiate development of technical cooperation agreements concerning forestry.	Mar 31/99		
	By 1999, assist DFAIT in seeking to negotiate lower tariffs for Canadian coal exporters to APEC member countries participating in the APEC Early Voluntary Sector Liberalization exercise.			
2.2.7	By 2000, pending the enactment of appropriate legislation, regulatory amendments for hazardous wastes should be completed in one to two years.	Mar 31/01	Provides appropriate regulatory structures for international trade and market access issues for recycling minerals and metals.	Domestic and global demand for recycling and recycled products has been steadily increasing. For ***SDS - Now and for the Future***, NRCan is leading the implementation of a federal resource recovery strategy to enhance and encourage increased recycling of resource materials in Canada, to support climate change objectives, create business opportunities, and facilitate trade in recyclables.

OBJECTIVE 2.3 – Building the capacity of Aboriginal, rural and northern communities to generate sustainable economic activity based on natural resources.

#	Target	Date target reported	How this target advances sustainable development	Future directions
2.3.1	By 1998, organize workshops on northern	Mar 31/99	Helps guide the Arctic Council in the	For ***SDS - Now and for the Future***, NRCan will

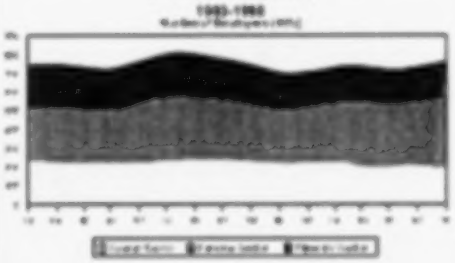
	energy, sustainable forest management, sustainability of minerals and mining as part of the Circumpolar Conference and Workshops, Sustainable Development in the Arctic: Lessons Learned and the Way Ahead, in co-operation with Indian and Northern Affairs Canada, DFAIT and Environment Canada.		development of its Sustainable Development Program for the Circumpolar Region.	continue to work interdepartmentally to promote sustainable development in the North, through the development of a common federal vision and action plan.
2.3.2	Compiling integrated information on the geology, hazards and permafrost conditions of the Yellowknife area, by 1999.	Mar 31/99	Addresses the impact of humans on the environment in Canada's largest northern community. The report Living with Frozen Ground provides guidance for infrastructure and industrial development of the area in an environmentally responsible manner.	In ***SDS - Now and for the Future***, NRCan committed to monitor and address natural hazards and disasters, by providing new seismic hazard information, by publishing a national landslide database, hazard map and synthesis of landslide hazard, and by providing complete topographic mapping at scales suitable for resource exploration and development in the north.
	Completing a federal-territorial-Inuit supported compilation of northern Baffin Island Geoscience, by 1999.	Mar 31/99	Provides maps, reports and a digital knowledge base of the bedrock and surficial geology and mineral potential of defined areas of north Baffin Island and Melville Peninsula. This will aid in mineral exploration for possible economic deposits that could sustain economic and social benefits.	
2.3.3	Deliver the First Nation Forestry Program (FNFP) in partnership with Aboriginal people, to enhance self-reliance in forest management, develop forest-based businesses, and provide economic and traditional land-use opportunities on and off-reserve, between 1997 and 2001.	Mar 31/01	Improves social, environmental and economic conditions in First Nation communities by providing training and strengthening independent forestry management.	Program evaluations have demonstrated that the FNFP has been highly successful in building capacity within Aboriginal communities to manage forest-based resources specific to regional/local circumstances and values. NRCan, in partnership with INAC, is aiming to launch a renewed First Nation Forestry Program by 2002 to continue to build Aboriginal and community capacity.

2.3.4	By 1998, develop a study to identify the non-technical barriers to the development of renewable energy technologies in Canadian remote communities.	Mar 31/99	Increases knowledge to help address barriers restricting the use of renewable energy in Aboriginal and remote communities through information transfer, technical training and other support.	***SDS - Now and for the Future*** commits NRCan to enabling communities to determine their energy future, through the development of a comprehensive, energy systems approach that encompasses renewable energy and energy efficiency technologies and management practices/systems. The comprehensive approach will build upon the success of RETScreen to facilitate broader option identification and assessment.
	By 1999, improve renewable energy project analysis software (RETScreen) for preparing project pre-feasibility studies.	Mar 31/00	Unfortunately, the fora were not held.	
2.3.5	By 1998, implement a training program on the Canada Lands Survey System in collaboration with Nunavut Arctic College.	Mar 31/99	Provides training and skills development opportunities for Aboriginal people in land management and surveying.	NRCan has committed to build Aboriginal and community capacity to practice sustainable natural resources management. Building on the program's success, NRCan is working to establish an effective and efficient property rights infrastructure for First Nations and Aboriginal groups under the Canada Lands Survey System.
	Over the period from 1997 to 2000, manage the delivery of the land claims survey program.	Mar 31/01	Provides communities with skills and information necessary to strengthen land resource management and planning.	
2.3.6	By 1998, develop basic agreement with Industry Canada's Community Access Program and NRCan's Sustainable Communities Initiative (co-led with Industry Canada and involving six other federal departments) to demonstrate the value of geospatial information, and initiate selection of communities for first round of pilots.	Mar 31/99	Strengthens the capacity of Canadian communities to use government information (in particular geospatial information), services and tools to plan and manage sustainable development using the Information Highway. This can increase community self-reliance and empowerment and strengthen leadership in terms of decision-making about sustainable development and community economic diversification in the context of the transition to a knowledge-based economy.	The success of the pilot Sustainable Communities Initiative has enabled Aboriginal, rural, northern and coastal communities to improve their ability to plan, make decisions and create partnerships. Over the period of ***SDS - Now and for the Future***, the Sustainable Communities Initiative will be expanded to reach 60 more communities.
	By 1998, initiate with the Nicola Tribal Association, the Nicola Valley Institute of Technology and five local bands, the development of computer technologies for the analysis and storage of codes and environmental	Mar 31/99		

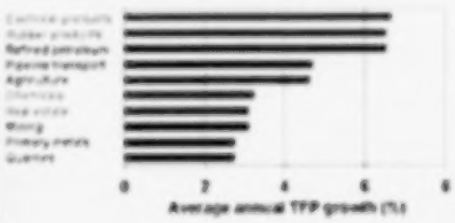
ethics, traditional Aboriginal information and forest management information.

Goal 2, Objective 2.1
Employment levels and productivity in resource and resource-related industries. Reported in 1999-2000.

Natural Resource Sectors
Direct Employment



Leading Ten Industries in Total Factor Productivity Growth in Canada, 1984-98



NRCan's Contribution

NRCan provides accurate measurements of employment and GDP for the resource sectors by reviewing the subject matter to ensure accuracy and applicability to the resource.

NRCan has reviewed productivity reports to determine the significant achievements of the resource industry in this area.

NRCan provides contributions to projects done in conjunction with private industry that will improve the productivity of workers, including:

- focuses on economic growth and quality of life
- an innovation plan to spur productivity
- investing in science, new technologies and knowledge; and
- supporting skills development and knowledge dissemination

What Does the Graph Mean?

Improving our quality of life and standard of living requires production improvements. Resources remain important to Canada's economy due to production gains. Six of Canada's top ten leaders in productivity growth from 1984-98 were resource based. More recently, the pulp and paper sector has seen productivity growth of 2.5% per year over the 1993 to 1998 time period, reflecting significant capital investments in the early 1990s. In 1998, five of the ten leaders in GDP per hour of work were resource industries. Canada's Natural Resource sectors provide a steady and solid foundation of high paying, highly skilled jobs. For the period 1998-99 overall employment in the resource industries increased by 15,000 GDP per employee was high at an average of 96,000 per employee

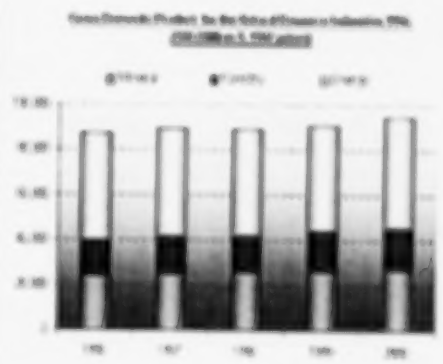
Next Steps

More knowledge will be provided by ResSources/NRCan's On-line initiative.

Our finding will be used to improve the work opportunities forCanadians in rural, northern and Aboriginal communities. NRCan will continue to provide accurate employment and productivity data for the resource industries, reviewed by subject matter officers familiar with the industry. Productivity rates for the resource industries will continue to be calculated using the sectoral comparison data generated by NRCan.

NRCan will continue to advance work on innovation, science and resource-related technologies that will improve productivity. Information for resource-related industries will be added to the performance indicators when the data are available.

Goal 2, Objective 2.1
Contribution of the natural resources sector to the GDP. Reported in 2000-01.



NRCan's Contribution

• NRCan is recognized internationally for the research and development it conducts in cooperation with leading research institutions making significant contributions to the strength of natural resources industries within the Canadian economy.

• NRCan supports development of world-class energy technologies, promotes Canadian forest science and technology throughout the world, and houses the world's leading knowledge base of Canada's minerals and metals industry.

• NRCan develops resource-oriented technologies, and promotes the success of natural resources industries in the knowledge-based innovative economy.

• NRCan explores and enhances international opportunities for Canadian companies, and leads international trade and investment missions to provide improved market access for Canadian natural resource products.

• NRCan helps Canadian companies market products at home and internationally.

What Does the Graph Mean?

• This graph brings together statistical information on the GDP in 1992 prices to describe the importance of natural resources industries, including the energy, forestry, and minerals and metals industries, to the economy.

• In 2000, the GDP of the natural resources industries was estimated at $94,416 million, accounting for 12% of the GDP of the total economy. From 1996 to 2000, the GDP of the natural resource industries increased by 8.55%, averaging more than a 2% increase per year.

• In addition to being directly responsible for over 900 thousand employees in Canada, these industries create many more indirect jobs in other industries that provide supplies and services.

• Employment is the most important measure to many of resource-dependent communities in Canada. Natural resources industries provide

Next Steps

• Innovation and productivity growth are key to maintaining strong natural resources industries in Canada. NRCan will both perform and support R&D to improve our industrial competitiveness, and to provide S&T solutions for a healthy environment.

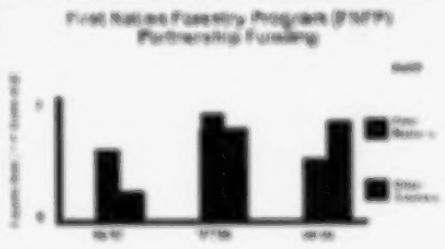
• To spur innovation in natural resources industries, NRCan will continue to strengthen its science and technology programs.

• NRCan will strive to build strong collaborative partnerships to develop the critical mass necessary to achieve research excellence and competitive advantage.

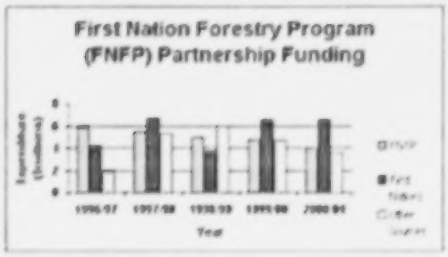
• NRCan will continue to promote the vital economic contributions of natural resources industries to the economy.

• NRCan will advance sustainable development by working with partners to develop technically-

high paying jobs across Canada, particularly in rural and remote areas.	sound solutions to environmental problems.

Goal 2, Objective 2.3 **Leveraged funding from First Nations Communities and other partners under the First Nations Forestry Program. Reported in 1998-99.**	
	**NRCan's Contribution** • NRCan works closely with First Nations project applicants and encourages them to seek out partners to support projects. • NRCan informs non-Aboriginal forestry companies and provincial government agencies of the First Nations Forestry Program and the potential opportunities to partner with First Nations. • NRCan provides the infrastructure and coordination for the implementation of the program, including the coordination of the National Management Committee and provincial and territorial managements committees that bring the program partners together.
What Does the Graph Mean? • Federal funding has been used by First Nations project applicants to lever additional project funds from First Nations communities and other non-Aboriginal partners annually since 1996-97. • Non-Aboriginal partner funding has grown substantially since the beginning of the program. • Over the first three years of the program, 1996-97 to 1998-99, federal funding of $16.4 million resulted in an additional $27.9 million being levered bringing total program value to $44.0 million. • Leverage ratios were 1:1 in 1996-97; 1:2.2 in 1997-98; and 1:1.9 in 1998-99.	**What's Next?** • NRCan will continue to assist First Nations to acquire non-Aboriginal partner funds. • NRCan will continue to market the benefits and importance of partnerships to government and non-Aboriginal forestry companies to ensure First Nations forestry needs are met.

Goal 2, Objective 2.3 **Leveraged funding from First Nations Communities and other partners under the First Nations Forestry Program. Reported in 2000-01.**	
	NRCan's Contribution • NRCan works closely with First Nation project applicants and encourages them to seek out



partners to support projects.

• NRCan informs non-Aboriginal forestry companies and provincial government agencies of the First Nation Forestry Program and the potential opportunities to partner with First Nations.

• NRCan provides the infrastructure and coordination for the implementation of the program, including the coordination of the National Management Committee and provincial and territorial management committees that bring program partners together.

• FNFP has supported 966 projects and successfully provided 3,900 First Nation workers with job experience, created over 55,000 person-weeks of employment and received 1,480 project proposals valued at $152.5 million.

• Examples of project accomplishments over the past five years include training and technology transfer in specialized areas such as home log building, nursery development, wildfire certification courses, silviculture and business planning. Other accomplishments included the creation of First Nation and non-Aboriginal partnerships in forestry activities and processing.

What Does the Graph Mean?

• Canada's First Nation Forestry Program is a vehicle for improving economic conditions in First Nation communities based upon sustainable forest management.

• Federal funding has been used by First Nation project applicants to lever additional project funds from First Nation communities and other non-Aboriginal partners annually since 1996-97.

• Over the first five years of the program, federal contribution funding of $21.1 million resulted in an additional $49.0 million being levered from First Nation and other sources to bring total program value to $74.1 million.

What's Next?

• NRCan and its partner, INAC, will continue to provide technical and other assistance to First Nations in the development of forestry related economic opportunities.

• NRCan will continue to assist First Nations to acquire non-Aboriginal partner funds.

• NRCan will continue to market the benefits and importance of partnerships to government and non Aboriginal forestry companies to ensure First Nation forestry needs are met.

• NRCan will demonstrate that the FNFP is meeting objectives.

• NRCan will continue to chronicle community-based success stories in the FNFP annual report and in departmental publications such as the First Nation Forestry Program, Five Years in Review (1996/97 2000/01).

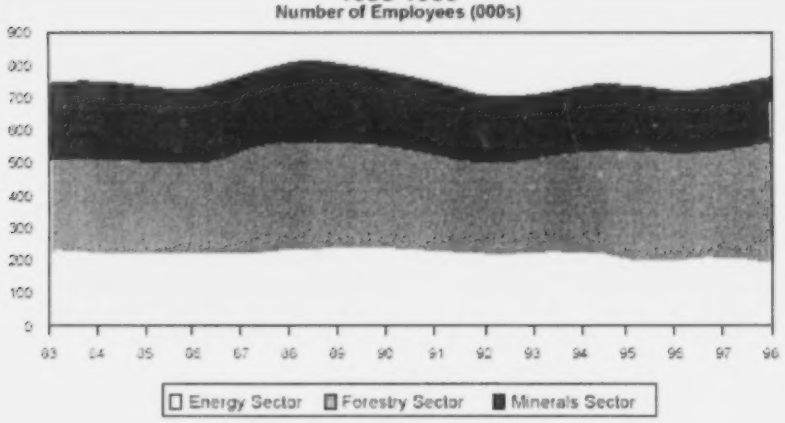
• NRCan, in collaboration with Indian and Northern Affairs Canada, will seek the renewal of the FNFP in 2001-2002.

Natural Resource Sectors

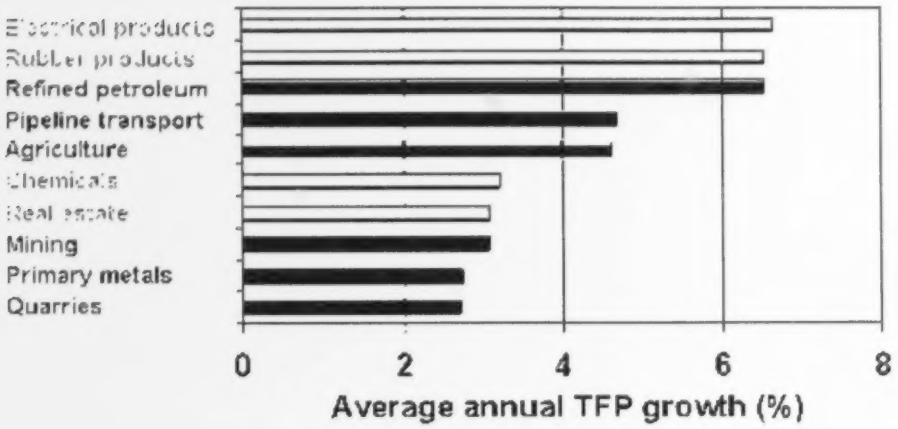
Direct Employment

1983-1998

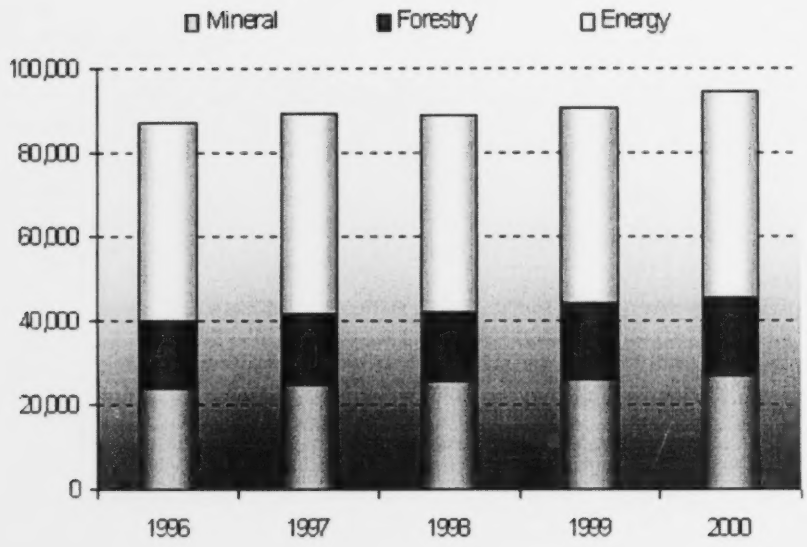
Number of Employees (000s)

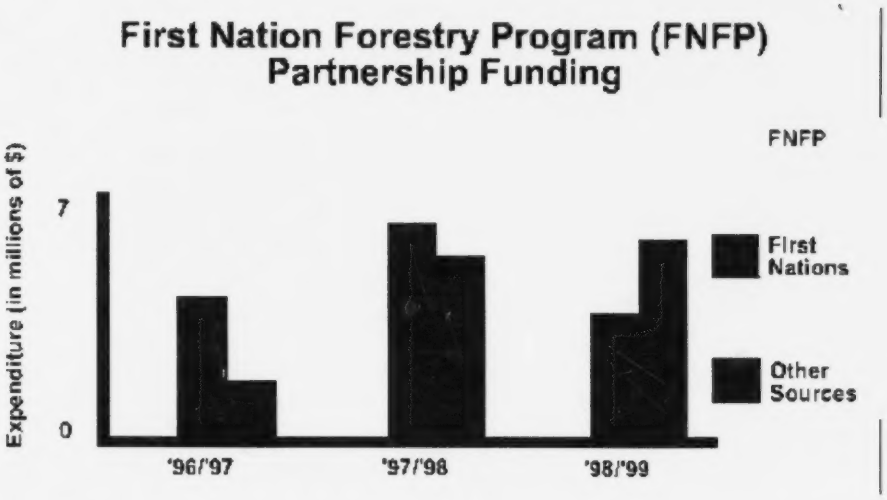


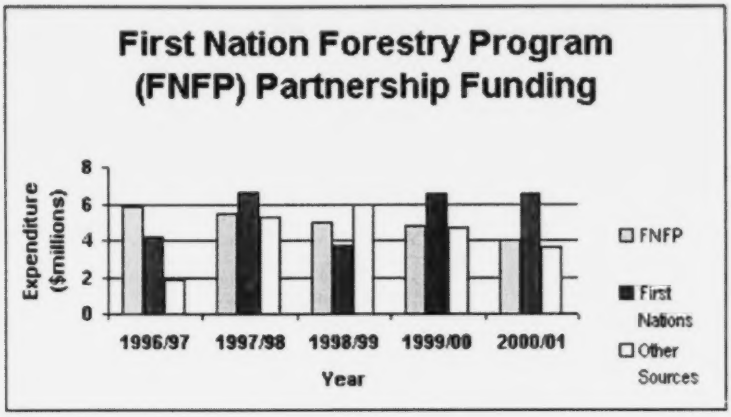
Leading Ten Industries in Total Factor Productivity Growth in Canada, 1984-98

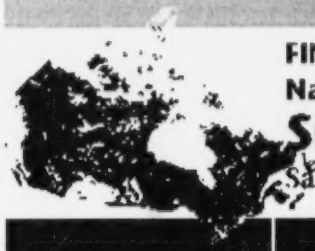


Gross Domestic Product for the Natural Resource Industries 1996-2000 (Million $, 1992 prices)




First Nation Forestry Program (FNFP)
Partnership Funding
FNFP
Expenditure (in millions of $)
7
0
'96/'97
'97/'98
'98/'99
First Nations
Other Sources


First Nation Forestry Program
(FNFP) Partnership Funding
Expenditure ($millions)
8
6
4
2
0
1996/97
1997/98
1998/99
1999/00
2000/01
Year
FNFP
First Nations
Other Sources



FINAL REPORT

Natural Resources Canada

Sustainable Development Strategy

Safeguarding our Assets, Securing our Future

Minister's Message

Introduction

Goal 1

Goal 2

Goal 3

Goal 4

Conclusion

Appendix A

Canadian Resource Recovery Strategy

Canada remains one of the worlds largest and most important resource producers. It is both timely and appropriate that Canada demonstrate, in a tangible manner, our commitment to the stewardship and sustainable development of these resource materials. As a result, in the Sustainable Development Strategy, NRCan committed to assessing the potential for a national strategy to promote greater recycling of metals.

NRCan's approach was to hold a series of consultations with key stakeholders, including other federal government departments, provincial ministries, municipalities and industry, to explore means for enhancing Canadian recycling efforts and to identify a federal government role in a national strategy.

Based on the information acquired form these consultations and surveys, NRCan assessed the potential for a national recycling strategy and is preparing a strategy for consideration by all stakeholders. This strategy is being designed to lend tangible and practical support to enhance resource recovery efforts initiated by provincial authorities, municipal governments and Canadian industry.

Once implemented, a national resource recovery strategy would seek to improve current infrastructure that will facilitate recycling; improve the management of Canada's above ground resource assets; and act as a catalyst to spur increased resource recovery activities. Through development of targeted programs and projects, the strategy will focus on building national awareness and engagement of the importance of resource recovery, strengthening technologies and tools to enhance resource recovery and recycling initiatives and fostering supportive domestic and international markets and regulatory climates.

Goal 3 – Maintaining a Healthy and Safe Environment

The environment is subject to ongoing change - sometimes as a result of natural processes, and sometimes due to human activity. Resource development and use has implications for the environment. NRCan has a significant role to play in ensuring that Canadians have a healthy and safe environment in which to live, work and play - in particular, with regards to climate change.

Significant commitments towards this goal included energy efficiency initiatives, and actions to advance our understanding of the climate change challenge, and ways to address it. Included among many others was the Energy Technology Futures (ETF) project. The ETF project developed a set of technology outlooks and held creative workshops and meetings with approximately 800 experts form industry, universities, government and research institutes in Canada, the United States and Europe. From these results, the ETF team has produced four plausible and distinct scenarios of what Canada's energy technology system could be three to five decades into the future, to assist in policy and decision-making. Continued work of the ETF program to be undertaken as part of ***SDS - Now and for the Future*** will provide advice to departmental research and development investments to drive Canada's long-term sustainable development objectives and reduce greenhouse gas emissions.

NRCan laid the groundwork for a Canadian Resource Recovery Strategy, by consulting with key stakeholders to explore means for enhancing Canadian recycling efforts and to identify a federal government role in a national strategy. NRCan will continue these efforts by implementing a Canada-wide initiative to increase the efficiency of materials recovery and recycling. For more information on the Canadian Resource Recovery Strategy, click here.

OBJECTIVE 3.1 – Helping limit and adapt to climate change

#	Target	Date target reported	How this target advances sustainable development	Future directions
3.1.1	By 1999, for the 8 Issue Tables for which NRCan is the federal sponsor or co-sponsor, design and analyze options for greenhouse gas emissions reductions, and develop Options Papers in the context of developing a national climate change strategy.	Mar 31/00	Provided a framework for the National Business Plan to help mitigate the problem of climate change approved by Joint Ministers Meeting later that year (October 2000).	Action Plan 2000 on Climate Change was announced in October 2000. The measures announced in Action Plan 2000 will be implemented over the period of ***SDS - Now and for the Future***, and will take Canada one third of the way to achieving its target established in the Kyoto Protocol.
3.1.2	By 1998, launch Energy Technology Futures (ETF) consultation process with multi-stakeholder groups.	Mar 31/99	Develops an understanding among Canadian stakeholders of the potential range of long-term technological futures which could fundamentally alter the relationship between economic growth and greenhouse gas emissions.	The ETF project is an investigative and exploratory policy research project. The project addresses the main public policy issue in the climate change debate: ie., altering the fundamental relationship between economic activity and Greenhouse Gas (GHG) emissions. For ***SDS - Now and for***

				the Future, the ETF project will identify key technologies and undertake a series of workshops with stakeholders, to develop a vision of Canada's energy system to 2020.
3.1.3	By 1998, launch EnerGuide for Houses program, Commercial Buildings Incentives program, and Energy Innovators Plus initiative.	Mar 31/99	Increases the efficiency of Canada's energy use and reduces greenhouse gas emissions.	These programs are enabling Canadians to create more energy efficient workplaces and homes. Over the period of ***SDS - Now and for the Future***, NRCan will expand Energy Innovators Plus program to have 50 more pilot projects to demonstrate energy savings from retrofits, by 2003.
	By 1998, bring into force the fourth amendment to the Energy Efficiency Act to expand the energy efficiency regulations to cover additional equipment and increasing the energy efficiency requirements of equipment under existing regulations.	Mar 31/99		***Action Plan 2000 on Climate Change*** will invest $500 million over five years on specific actions to reduce greenhouse gas emissions, encouraging the implementation of energy efficiency and GHG reduction measures.
3.1.4	By 1998, complete development of a carbon database for Canadian soils, for integration in the Carbon Budget Model of Canadian Forests.	Mar 31/99	Improves the knowledge base between Canada's forests, changes in climate and the global carbon cycle. Enables Canada to meet national and international reporting requirements, and plans for broad-scale adaption strategies, ensuring the forest sector's long-term environmental and economic viability. The results of the project came out in two bulletins. The initial CD presentation was developed, but the final product cancelled as it was deemed insufficient added value. The project provided critical baseline geoscience knowledge and partnerships that	For ***SDS - Now and for the Future***, NRCan will undertake science to understand the potential impacts of climate change and develop adaptation and mitigation strategies. Among other science and technology activities to understand climate change in SDS - Now and for the Future, NRCan will complete a study on the impacts of climate change on biodiversity, and will develop reports, databases and Web Sites to communicate the impacts of climate change on various landscapes.
	By 1999, complete and release Geological Survey of Canada reports on the Palliser Triangle.	Mar 31/99		
	By 2000, produce an interactive multi-media CD-ROM presenting	Mar 31/01		

	results of study in both official languages.		have been instrumental in building ESS climate change activities in the Prairies, including development of the Prairie Adaptation Research Collaborative (PARC).	

OBJECTIVE 3.2 – Promoting technologies and stewardship practices that reduce environmental impacts, conserve biodiversity and increase the efficiency of resource development and use.

#	Target	Date target reported	How this target advances sustainable development	Future directions
3.2.1	By 1998, launch Renewable Energy Deployment Initiative.	Mar 31/99	Encourages the use of renewable energy and develop cost-effective renewable energy technologies.	For ***SDS - Now and for the Future***, NRCan, in partnership with industry, is furthering its efforts to promote renewable energy, and will develop wind energy technologies, small hydro technologies, technologies to convert biomass into electricity, photovoltaic technologies and supporting infrastructure.
3.2.2	By 1998, extend the Mine Environment Neutral Drainage (MEND) program for three years.	Mar 31/99	Prevents and reduces acid mine drainage by transferring field project technologies to the mining industry and government sectors.	NRCan will implement a new post-MEND Program which will address the priority mine closure issues identified through an extensive stakeholder consultation process, over the period of ***SDS - Now and for the Future***.
3.2.3	Report on options to control the harmful effects of air emissions from copper and zinc smelters, as identified under the Priority Substances List (PSL-2) process, by 2000.	Mar 31/01	Ensures that hazards for metals are identified and that control measures are put into place.	Environment Canada and Health Canada will release the final assessment report and conclusions on releases from primary and secondary copper and zinc smelters and refineries.
3.2.4	By 2000, undertake projects with industry under the auspices of the Canadian Lightweight Materials Research Initiative (CLiMRI).	Mar 31/99	Develops technologies to significantly reduce the weight of automobiles, resulting in reduced fossil fuel consumption and carbon dioxide emissions.	NRCan will continue to develop and share innovative technology to reduce greenhouse gas emissions in the transportation sector by developing lightweight, high performance

				materials and manufacturing processes for fuel-efficient vehicles. In addition, NRCan will develop technologies and strengthen the knowledge base for alternative fuels, and work with provinces to educate drivers about fuel efficiency.
3.2.5	By 1997, implement a second five-year phase of Canada's Model Forest Program.	Mar 31/99	Explores, with stakeholders, the evolution of promoting best forest practices in Canada.	The Model Forest Program has enabled forests to become living laboratories where people, with a direct interest in the forest, supported by the most up-to- date science and technology, could participate in decisions about how the forest could be sustainably managed. NRCan will launch a renewed Model Forest Program by 2002.
	By 1998, establish evaluation framework with stakeholders.	Mar 31/99	Developed a suite of local level indicators for sustainable forest management according to the various socioeconomic, cultural and environmental conditions.	
	By 2000, initiate evaluation process.	Mar 31/01	A performance based evaluation framework was evaluated and accepted by Model Forest Network in 1999. This tool enables the sound assessment of activities and innovative solutions developed throughout the Model Forest Network to promote sustainable forest management.	
3.2.6	By 1998, complete transfer of the Spruce Budworm Decision Support System to Alberta clients, where budworm is threatening northern spruce forests.	Mar 31/99	Provides forest managers with an increased capacity to make sound decisions on their interventions while supporting biodiversity conservation and aesthetic values.	For ***SDS - Now and for the Future***, NRCan's forest management research will develop tools and models for predicting long-term effects of harvesting regimes on Canada's forests, and develop proof-of-concept of engineering forest trees for resistance to fungal and insect pests, to conserve and protect forest ecosystems and to enhance timber production.
	By 1999, publish Best Practices Guide for avoiding negative effects of clear-cutting on forest soil productivity and aquatic systems in the Boreal Shield.	Mar 31/99	Provides information on environmentally sound harvesting methods tailored to these two ecosystems to reduce the susceptibility of forest stands to pests and disease, while avoiding the loss of large stands of trees and supporting biodiversity conservation and aesthetic values.	

	By 1999, produce a guide on stand manipulation systems to reduce susceptibility to pest damage in the Montane Cordillera and Atlantic Maritime ecozones.	Mar 31/00	Provides evidence for sound decision making on the sustainable development of forests.	
3.2.7	By 2000, through Forintek Canada Corporation, conduct a study to increase the use of bark waste in wood composite material.	Mar 31/01	The study produced very positive results. Forintek is currently in negotiations with Eastern and Western companies to lead to the commercialization of structural and non-structural barkboard products. This is one more step towards making wood wastes into resilient products, thus relieving some pressure on forest harvesting and, by not burning them, reducing greenhouse gas emissions.	NRCan will continue to support innovative research to address the use of wood wastes to develop new resilient wood product as a contribution to Canada's commitment to sustainability.
3.2.8	By 1998, develop an action plan, in consultation with stakeholders. The action plan will input to Canada's Second Report to the Convention on Biological Diversity in 2000.	Mar 31/99	Fulfills federal forestry commitments in the Canadian Biodiversity Strategy.	For ***SDS - Now and for the Future***, NRCan will develop partnerships, through the Biodiversity Stewardship in Resource Industries Initiative, between resource industries and conservation organizations to undertake non-regulatory initiatives to conserve biodiversity.
3.2.9	By 1998, launch Diesel Exhaust Emission Program.	Mar 31/99	Reduces diesel emissions in the mining industry through technology transfer.	Three major DEEP projects are currently on-going and NRCan's Mining and Mineral Sciences Laboratories is a key R&D participant. DEEP will be active for through 2002, until two large field projects which involve testing of high efficiency filtration units to remove diesel exhaust particulates have been completed. The third project deals with the characterization of the emission contribution of service/light duty vehicles.

3.2.10	Complete a review of the international use of eco-efficiency within the natural resource sectors to identify opportunities to use eco- efficiency to improve environmental performance and competitiveness, by 1999.	Mar 31/00	Promotes sustainable development through economic development and identified opportunities in eco-efficiency.	This review, titled ***The Role of Eco-efficiency: Global Challenges and Opportunities in the 21st Century*** and published on CD-ROM in 2000, led to a new commitment in ***SDS - Now and for the Future*** to work with partners to establish Canada's capacity for eco-efficiency, by ensuring that the proper techniques and tools are made available to enterprises in the natural resources sector to facilitate the adoption of eco-efficient practices.

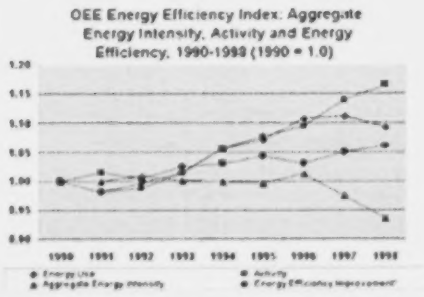
OBJECTIVE 3.3 – Safeguarding Canadians from natural hazards and the risks associated with natural resource development and use.

#	Target	Date target reported	How this target advances sustainable development	Future directions
3.3.1	By 1999, promulgate new regulations and bring into force the Nuclear Safety and Control Act.	Mar 31/00	On May 31, 2000, the Nuclear Safety and Control Act regulations were promulgated. This modernized the 1950s-era nuclear safety and regulatory structure to ensure that the use of nuclear energy and materials protects health safety, security and the environment; and respects Canada's international commitments on the peaceful use of nuclear energy.	The new Nuclear Safety and Control Act and Regulations are now in effect. Work is underway to revise Canada's Nuclear Liability Act; according to current planning goals, the new legislation is expected to be established by 2002. To further public understanding about nuclear issues, NRCan will provide a current and comprehensive Web-based package of information on nuclear energy and related issues, as part of ***SDS - Now and for the Future***.
3.3.2	By 1998, prepare, in consultation with other federal departments, the government response to the Seaborn Panel, which will outline the next steps for the long-term management of nuclear fuel waste in Canada.	Mar 31/99	Provides policy direction for the long-term management of nuclear fuel waste, leading to action to dispose of the nuclear fuel waste in an environmentally responsible manner.	Develop policy direction on government oversight for the long-term management of nuclear fuel waste so that activities are carried out in an environmentally-sound, safe, comprehensive, integrated and cost-

				effective manner consistent with the 1996 Government of Canada Policy Framework for Radioactive Waste.
3.3.3	By the year 2000, develop with communities a solution for the Port Hope, Ontario area wastes and review options with Cabinet.	Mar 31/01	On March 29/01, the Government of Canada entered into a legal agreement with the Port Hope area communities for the cleanup and long-term management of local historic low-level radioactive wastes. The $260 million project will take roughly 10 years to complete.	NRCan will continue to ensure that stakeholders have an active role; in particular, NRCan will work to build an enhanced understanding of the nuclear energy option among the public, and the federal government's role.
	By the year 2000, complete the assessment of the Surrey Siting Task Force report on a disposal solution for the Surrey, British Columbia wastes and begin to implement recommendations.	Mar 31/01	By the end of March 2000, the Government of Canada had implemented the recommenations of the Surrey Siting Task Force and completeed the removal of hisotric wastes from two industrial sites in Surrey, with appropriate relocation to long-term management facilities. NRCan continues to be committed to ensuring an active stakeholder role in the decision making to safeguard public health and the environment.	
3.3.4	By 1998, launch Metals in the Environment initiative.	Mar 31/99	Improves the understanding of natural releases of metals in the environment and enables the determination of contribution of metal loadings from natural and anthropogenic sources	NRCan will publish comprehensive results of the 5-year Metals in the Environment (MITE) Initiative by 2002, to help risk assessors and policy makers make appropriate decisions regarding the monitoring and control of toxic forms of certain metals.
3.3.5	By 1998, provide technical support for the pilot-phase of the International Lead Management Centre (ILMC).	Mar 31/00	Helps to reduce the risks to human health from exposure to lead.	On-going advice and information will continue to be provided to the ILMC to enhance their projects in response to the OECD Ministerial Declaration on Lead in order to support their mandate to promote the

				continued use of lead in an environmentally sound manner.
3.3.6	By 1999, develop criteria for the most appropriate evacuation system based on the risk assessment approach.	Mar 31/99	Minimizes environmental impacts and human suffering in the event of accidents in frontier oil and gas development.	Please provide text (ES) Sent reminder Dec 18/01
	By 1999, initiate a study to conduct further work on the development of improved personnel evacuation survival suits.	Mar 31/99		
3.3.7	By 2000, produce a natural geological hazards atlas.	Mar 31/01	Increases public awareness an understanding of geological hazards, which can assist in their recognition, avoidance and mitigation.	NRCan will publish new seismic hazard maps and hazard information for Canada and make data available on-line.
3.3.8	By 1998, transfer the Spatial Fire Management Information System to fire management agencies in Saskatchewan, Alberta and British Columbia.	Mar 31/99	Develops models to monitor and predict the behavior of extreme forest fires that threaten communities.	NRCan will generate Internet-accessible fire reports, maps and tables through the Canadian Wildland Fire Information System and the Fire Monitoring, Mapping and Modeling System on a daily basis. For ***SDS - Now and for the Future***, NRCan will continue to monitor and address natural hazards and disasters, to reduce social, economic and environmental losses due to natural hazards.
	By 1998, complete second phase of the international crown fire experiment in the Northwest Territories, investigating fire behaviour, atmospheric emissions and effectiveness of personnel survival equipment.	Mar 31/99		
	By 1998, complete development and testing of human-caused and lightning-caused fire occurrence models for British Columbia.	Mar 31/99		
	By 1998, modify the Prescribed Fire Analysis System for use in the Yukon.	Mar 31/99		

Goal 3, Objective 3.1 **Trends in energy efficiency. Reported in 1999-2000.**	
	NRCan's Contribution Several factors have contributed to saving energy.



Among these are the efforts of NRCan's many initiatives aimed at moving the market toward improved energy efficiency. These 15 initiatives collectively targeted all energy consumers and emphasize partnerships and economic investments.

For example, the Commercial Buildings Incentive Program (CBIP) offers support for the design of new buildings that are constructed to be at least 25% more efficient than the Model National Energy Code for Buildings. This financial incentive helps to offset the incremental cost associated with designing energy efficient buildings. As of March 2000, 42 buildings were covered by CIBP, agreements involving $1.97 million in financial incentives.

What Does the Graph Mean?

• In order to isolate and relate trends in energy efficiency, a factorization methodology was used to attribute the change in energy use from 1990 to 1998 across four factors: activity, structure, weather and energy efficiency.

• Secondary energy use increased by 9.2%.

• The aggregate activity (GDP) increased by 16.6%.

• Aggregate energy intensity (E/GDP) decreased by 6.3%.

• The OEE Energy Efficiency Index improved by 6.0%.

What's Next?

As a key element in Canada's response to the Climate Change issue, NRCan's programs aim at improving energy efficiency in all sectors of the Canadian economy. In addition, NRCan has established the National Energy Use Database (NEUD) to improve our understanding of where and how energy is used in Canada. It provides information to track progress, improve Canada's analytical capability and identify opportunities to further improve energy efficiency.

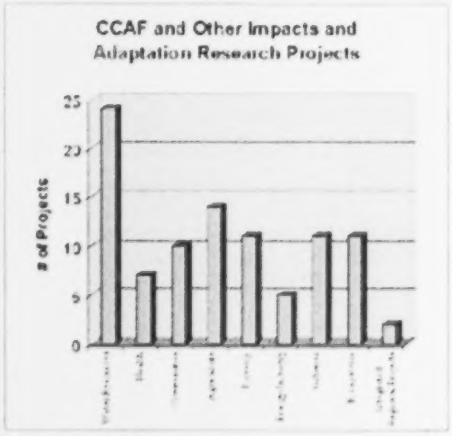
NRCan is heavily involved in the consultations and analysis being undertaken to follow up on the work of the 15 Issue Tables established under the National Climate Change Process.

Goal 3, Objective 3.1
Progress towards the identification of impacts and adaptation measures. Reported in 2000-01.

NRCan's Contribution

• The Climate Change Action Fund (CCAF) Impacts & Adaptation program, managed by NRCan's Adaptation Liaison Office, provided funding for 76 projects that increased the understanding of impacts and contributed to adaptation measure development across the country.

• NRCan's A-base supported 16 projects in its core areas of expertise - landscapes, hazards, energy, water resources and coastal zone management. Key results included:



• analysis of the risks of sea level rise for Charlottetown, Prince Edward Island and development of a storm surge model to provide warnings for current storms;

• estimates of the risk posed by permafrost degradation to infrastructure in two northern communities and a template for analysis of other northern communities;

• development of a model for road and pipeline route selection in terrain underlain by permafrost;

• the first estimates of the impacts of climate change on Canadian groundwater resources;

• identification of key gaps and climate change impacts and adaptation research priorities in Canada's North.

• NRCan also worked on research aimed at assisting forest managers plan for the future by providing insights into regional implications of fire, pests, disease and winter dieback. NRCan research, based on sophisticated simulation models, suggests that the average area burned may increase by as much as 50% over the next 50 years and may be increasing already. This increase would mean about 1% of Canada's forest would burn every year and much of that would probably not regenerate as forest.

• For additional information, refer to: http://www.adaptation.nrcan.gc.ca

What Does the Graph Mean?

• The graph demonstrates the increased impacts and adaptation research activity on key topics. The largest increase is in the water resources sector; information which is critical to other sectors such as agriculture and communities.

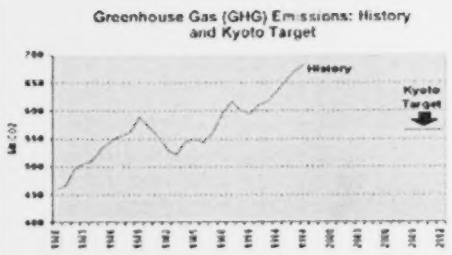
• The regional distribution of projects reflected the issues of concern to different regions of Canada.

What's Next?

• The extension of the CCAF along with the Government of Canada Action Plan 2000 will result in a tripling of the investment in the Impacts and Adaptation program. Greater emphasis will be placed on adaptation measure development.

• In addition to increased research activity, a Canadian Climate Impacts and Adaptation Research Network will become fully operational in 2001. It will help engage new expertise and stakeholders, and facilitate faster exchange of research results

Goal 3, Objective 3.1
Greenhouse Gas Emissions compared to Kyoto Protocol. Reported in 1999-2000.



NRCan's Contribution

• Technology Early Action Measures – TEAM accelerates the pace of deployment of new, more energy efficient, technologies. Investments of $55 million over 3 years have leveraged more than 10 times that amount from partners. Projects to date have the potential to reduce GHG emissions by 50Mt by 2010.

• Science Impacts and Adaptation – The Prairie Adaptation Research Cooperative in Regina was formed to better understand the effects of climate change on regions and on human activity so as to assess possible impacts and adaptation options.

• Public Education and Outreach – This initiative has been co-chaired by NRCan and Environment Canada. NRCan continues to co-manage the public education and outreach component of the CCAF to improve awareness and understanding of climate change and encourage appropriate action.

• Foundation Analysis – Canada's Emissions Outlook update was published, providing a reference scenario for the multi-stakeholder consultations and strategy.

What Does the Graph Mean?

• As the economy and Canadian population grow, so too does energy use and hence GHG emissions. Dips in the graph are caused mainly by recessions, e.g. 1982.

• The Kyoto target is shown by the 565 Megatonnes of carbon dioxide (CO2) for the 2008-2012 period, a level last achieved in 1987.Meeting this target is of particular importance to NRCan as some 80% of GHG emissions are energy-related.

• Canada has made progress in bringing emissions under control, even as the economy and population expand.

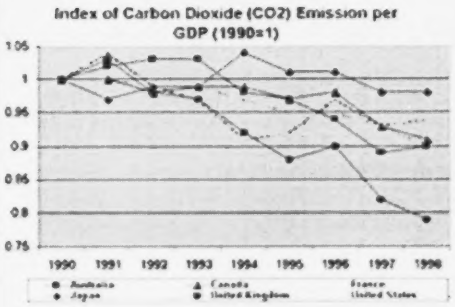
• Achieving the Kyoto target in a way that won't hamper economic growth is a significant challenge.

Next Steps

• The Government of Canada is working towards the finalization of a National Implementation Strategy.

• NRCan continues to work with Environment Canada and Foreign Affairs and International Trade Canada to develop Canada's positions on key issues for negotiation at the 6th Conference of the Parties (CoP6), and particularly, the framework for a ratifiable package, e.g., the elaboration of efficient and unfettered Kyoto market-based mechanisms, the comprehensive inclusion of carbon sinks and the engagement of all major developed and developing economies in the implementation of the Protocol.

Goal 3, Objective 3.1
GHG emissions to GDP ratio compared to other countries. Reported in 1999-2000.



NRCan's Contribution

• Buildings: .NRCan established and managed the successful Green Building Challenge, an international project to develop and test new methods to assess the environmental performance of buildings.

• With partners in the private sector, NRCan developed the world's most advanced biomass-fired pellet stove.

• Transportation: NRCan raised awareness on more climate-friendly vehicles and fuels by organizing and sponsoring events such as the Electrathon, the Future Car Challenge, Sunrayce and the Ethanol Vehicle Challenge.

• NRCan helped develop technology to determine the cetane level of diesel fuel, earning it a Federal Partners in Technology Transfer Award.

• Industry: NRCan field tested a gas turbine operating on a fuel with significantly lower emissions. Since power generation accounts for about 20% of GHG emissions, the potential for this new process is enormous.

• NRCan transferred technology to be used in 45 pulp and paper mills that has the potential to reduce water consumption by 80% and CO2 emissions by 25,000 t/y.

What Does the Graph Mean?

• This chart compares the carbon efficiency (i.e. ratio of GHG emissions to economic output) of six OECD industrialized countries.

• If a country's line goes up, the emissions intensity of the economy performance is worsening.

• Canada shows a steady increase in carbon efficiency over time, comparing favourably to four of the five other countries. Only the U.K. has performed better, mainly as a result of a switch from coal to natural gas for electrical generation.

• Canada's improving emissions performance is also the result of switching to less carbon-intensive fuels, and greater energy efficiency.

What's Next?

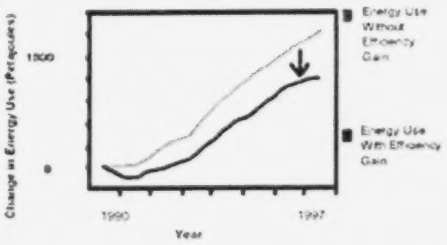
• NRCan continues to put strong emphasis on increasing energy efficiency throughout the economy.

• NRCan also works to promote the use of renewable energy, and has committed to reporting on trends in this area in the 2002 departmental performance report.

• NRCan's Energy Technology Futures initiative, which contributes to climate change awareness and mitigation strategies through the gathering and dissemination of information on future energy scenarios, is informing Canadian and international agencies about strategic directions and developments with regard to possible energy futures and responses.

Goal 3, Objective 3.1
Trends in energy efficiency. Reported in 1998-99.

Change in Energy Use due to Efficiency Gains



NRCan's Contribution

• Several factors have contributed to saving energy. Among these are the efforts of NRCan's Office of Energy Efficiency (OEE) which manages and operates 18 energy efficiency initiatives. These initiatives are aimed at moving the market toward improved energy efficiency. Initiatives target all energy consumers emphasize partnerships and economic investments.

• The OEE uses five basic policy tools in pursuing its vision of "Leading Canadians to energy efficiency at home, at work and on the road". These policy tools are:

a) leadership, shown by increasing energy efficiency in federal operations;

b) information, to advise energy users of efficiency opportunities;

c) voluntary actions, by which manufacturers of energy using equipment and major energy users commit to improving energy efficiency;

d) regulations, to eliminate inefficient products from the market; and

e) fiscal incentives, to encourage the use of energy-efficient technologies and practices

What Does the Graph Mean?

• Between 1990 and 1997, energy use increased mainly because of changes in activity, structure and weather.

• Changes in energy efficiency kept energy use from increasing more than it otherwise would have over this period. The potential growth in energy use was reduced from 17.3% to 12.9% due to improvements in energy efficiency.

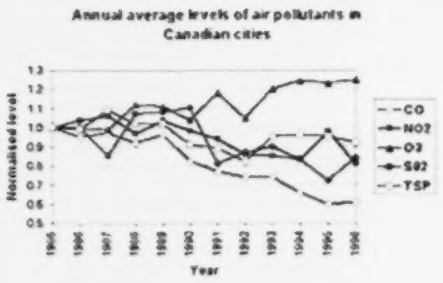
• This reduction in energy use saved Canadians an estimated $4.4 billion/year and reduced CO2 by 4.1 per cent since 1997.

Next Steps

• At Kyoto, Japan in December 1997, Canada committed to reduce emissions to six per cent below 1990 levels between 2008 and 2012. Current projections show that additional effort will be required to meet this target.

• In the 1998 federal budget, the Government of Canada allocated $50 million per year for three years to the Climate Change Action Fund to develop a national implementation strategy and some early measures to address climate change. The OEE is playing a key role in the national climate change consultation process. This process will lead to the development of a realistic and effective climate change national implementation strategy aimed at the Kyoto target.

Goal 3, Objective 3.2
Environmental influence of NRCan's science, technology and stewardship practices.
Reported in 2000-01.



NRCan's Contribution

• NRCan addresses the issue of air quality by developing and promoting technologies, programs and new knowledge for the reduction of pollutants generated through the production, conversion and use of energy. Initiatives include:

• Developing and promoting technologies and processes for greater energy efficiency, such as lightweight materials, integrated industrial processes, and energy efficient buildings.

• Developing advanced combustion and pollution abatement technologies for efficient stationary combustion processes.

• Developing clean-burning alternative fuels and advanced propulsion systems (e.g. gaseous fuels, alcohols, biofuels, hydrogen, fuel cells, electric vehicles and hybrids and related systems)

• Improving biomass production technology for biofuels from forest residues, including harvesting residues, noncommercial timber and brush species.

What Does the Graph Mean?

• The graph shows the annual average levels of five significant air pollutants in Canadian cities - carbon monoxide (CO), nitrous oxide (NO2), ground-level ozone (O3), sulphur dioxide (SO2) and Total Suspended Particulates (TSP). Values for each pollutant have been normalized to 1985 levels.

• Most air pollution is the result of combustion of fossil fuels in vehicles, home furnaces, industrial operations and thermal power generation plants.

• All pollutants except O3 show a general downward trend, in spite of urban growth and an increase in the number of emission-producing activities, such as an increase in the number of vehicles.

• O3 is the result of sunlight on nitrogen oxides and volatile organic compounds such as benzene, which comes primarily from unburned gasoline in vehicle exhausts. Its source in Canadian centres is frequently the USA.

What's Next?

NRCan's initiatives, undertaken in partnerships, will help reduce the adverse impacts from global warming, acid rain and smog, especially in urban areas.

In February 2001, the Government of Canada announced an investment of $120 million in new measures to accelerate action on clean air, including in the areas of cleaner fuels, reduction of smog-causing emissions from industrial sectors, and abatement technologies for particulates.

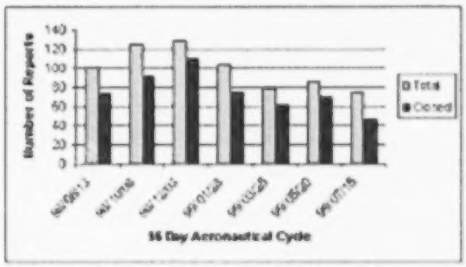
As well, through its federal Program of Energy R&D (PERD), NRCan will continue to target cleaner and more fuel efficient transportation, as well as reduced industrial emissions. New technologies such as fuel cells, and electric and hybrid vehicles are at various stages of development but will need some time before they impact urban air quality and regulations governing trans-boundary air pollutants.

A key factor in improving vehicle efficiency is its

	weight - for every 10 percent reduction in vehicle weight, there is a six to eight percent improvement in fuel efficiency and a reduction in the release of atmospheric pollutants. NRCan will continue to coordinate the Canadian Lightweight Materials Research Initiative (CliMRI), a government/industry partnership, whose research areas include technologies for the design of lightweight materials, and manufacturing processes to produce parts from these materials to be used in transportation applications.

Goal 3, Objective 3.3
User satisfaction with aeronautical charts. Reported in 1998-99. Under NRCan's current Performance Measurement Framework, this item is Goal 4, Objective 4.2.

Number of Discrepancy Management Reports per 56-Day Aeronautical Cycle



NRCan's Contribution

- NRCan's Aeronautical and Technical Services (ATS) works for the safety of Canadians by:
- publishing Canada's aeronautical charts, essential to the safety and efficiency of aviation in Canada;
- managing the Emergency Mapping Program;
- imaging and printing topographic maps, hydrographic charts and other cartographic products used for navigation, search and rescue.

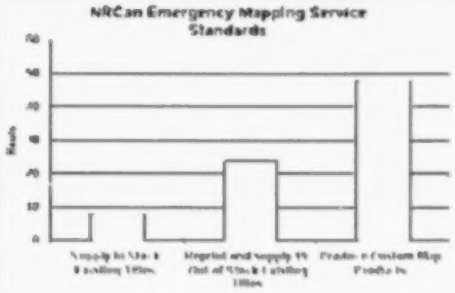
What Does the Graph Mean?

- The graph shows the total number of Discrepancy Management Reports (DMRs) raised per 56-day aeronautical cycle and the number of those closed within the same cycle.
- A DMR can be a client complaint, or any kind of concern raised to the departments attention. Each concern will be investigated and reported back to the originator.
- NRCan expects to have closed and resolved at least 45% of DMRs within the same cycle, and the graph shows that this expectation is consistently met or exceeded.
- DMRs are addressed in accordance with the ISO 9001 standard.

Next Steps

- To reflect the changing needs of the aviation community, the ATS group has begun offering aeronautical information in digital form. This includes information from the Canadian Aeronautical Charts database as well as digital charts and electronic publications.
- The four High Enroute charts were replaced on 25 March 1999, with a new series of six charts covering Canada. NRCan will monitor client reactions to this major improvement.

Goal 3, Objective 3.3
Impact of NRCan's science and technology on the identification, mitigation and response to natural hazards. Reported in 1999-2000. Under NRCan's current Performance Measurement Framework, this item is Goal 4, Objective 4.1.



NRCan's Contribution

• In September 1999 NRCan participated in VALIDEX, the government-wide exercise to test the readiness of Federal Departments to respond to emergencies that may arise. NRCan emergency mapping response met all of the standards of this exercise.

• In a national emergency, the maps which NRCan publishes can help save lives and protect property by guiding the efforts of rescuers. For example, during the Ice Storm of 1998, NRCan topographical maps were used by military and civilian emergency organizations to coordinate responses.

• In collaboration with Emergency Preparedness Canada and the Department of National Defence, NRCan ensures mapping resources are available for emergency response planning and on-site tactical operations.

What Does the Graph Mean?

The graph shows the standard that NRCan has set in which the department can provide different kinds of maps

We have documented (compliant with our ISO 9001 quality management system) emergency mapping procedures that enable effective emergency response planning by the Minister of the Department of National Defence. The existing standards that NRCan has set are:

• Within 8 hours NRCan will supply an existing set of in stock maps;

• Within 24 hours NRCan will supply any existing set of out of stock maps;

• Within 48 hours NRCan will produce a customized map to service emergency requirements.

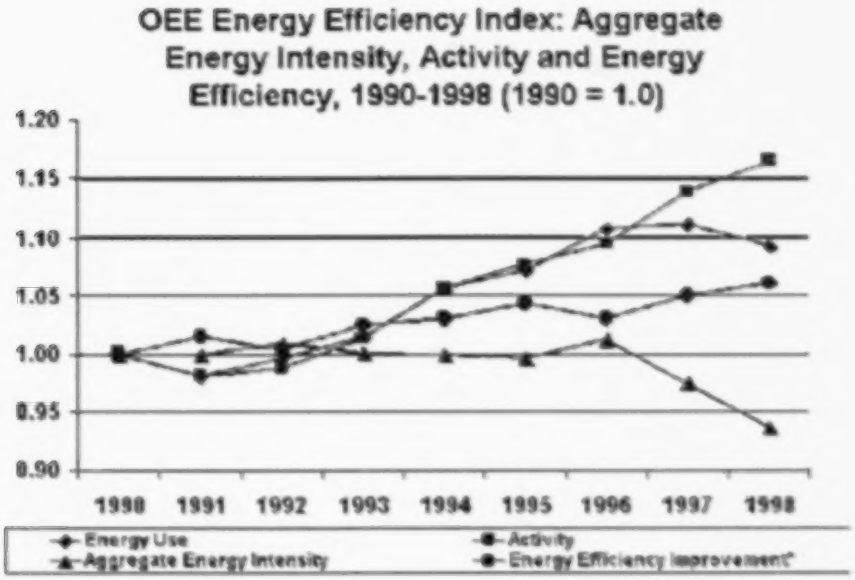
Next Steps

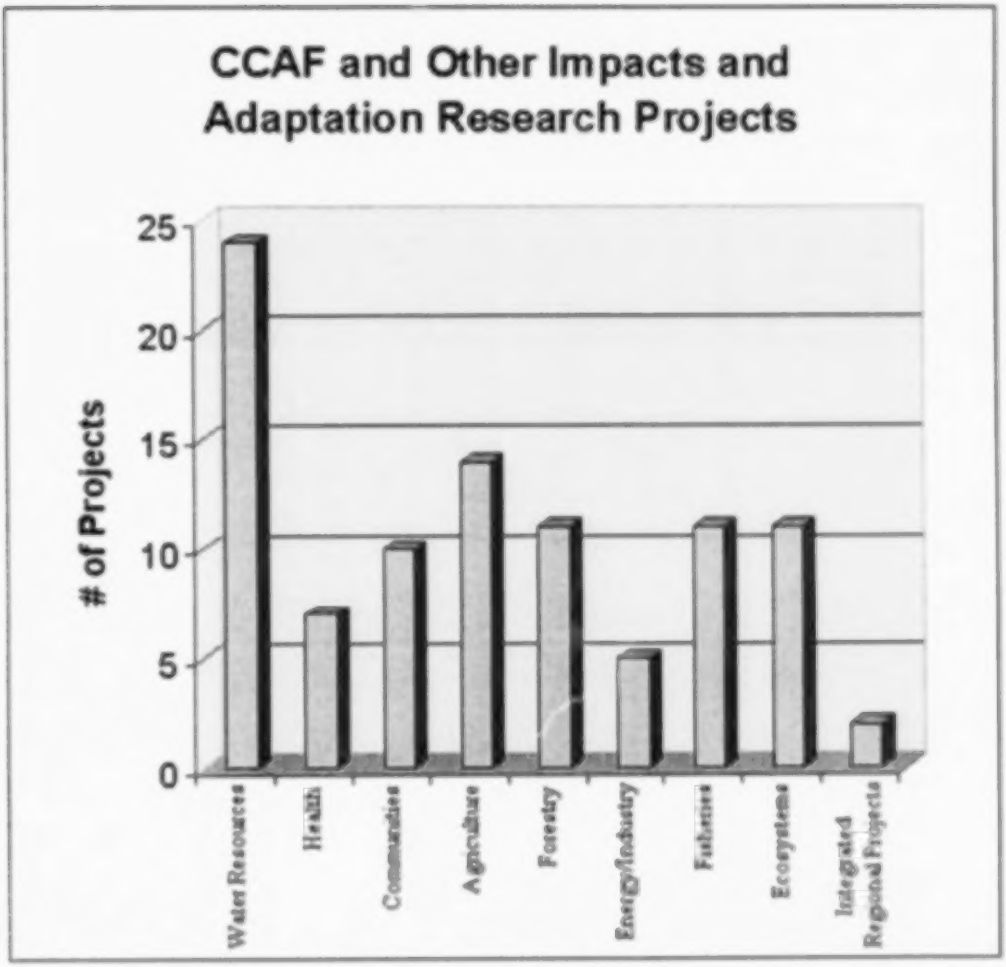
NRCan will explore ways to:

• confirm emergency mapping needs and technological opportunities with client agencies.

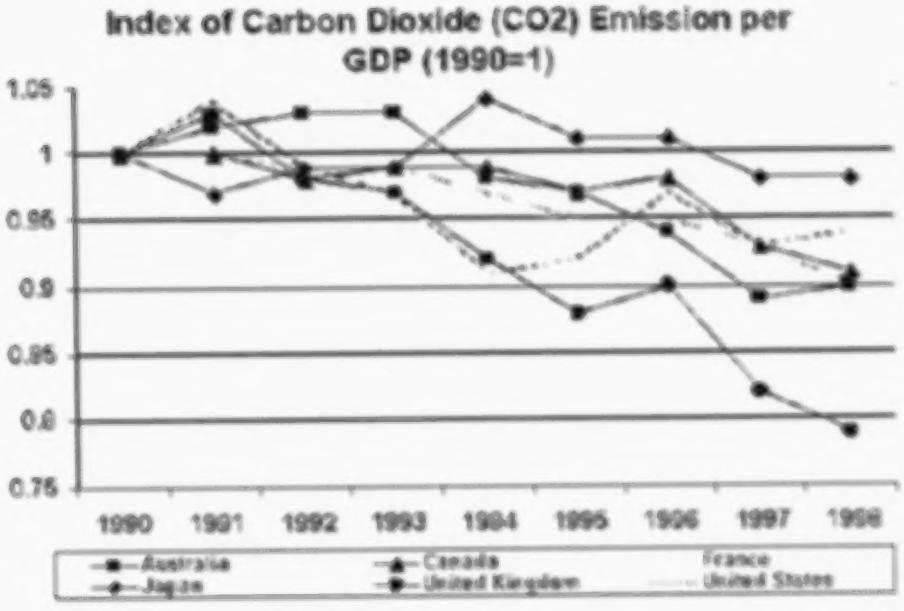
• acquire digital presses and convert paper maps to a digital format that can be reprinted on demand

• improve disaster management preparedness for targeted areas at high risk from events such as earthquakes, landslides and floods.

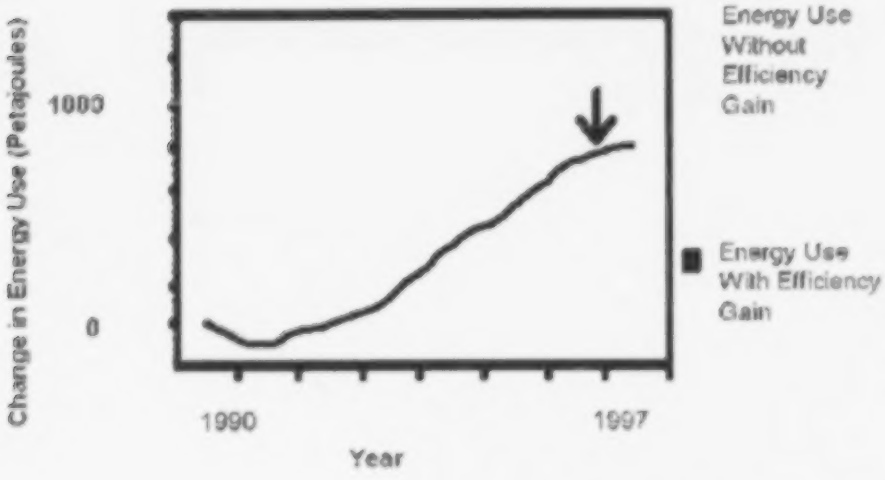

OEE Energy Efficiency Index: Aggregate Energy Intensity, Activity and Energy Efficiency, 1990-1998 (1990 = 1.0)
1.20
1.15
1.10
1.05
1.00
0.95
0.90
1990
1991
1992
1993
1994
1995
1996
1997
1998
Energy Use
Activity
Aggregate Energy Intensity
Energy Efficiency Improvement

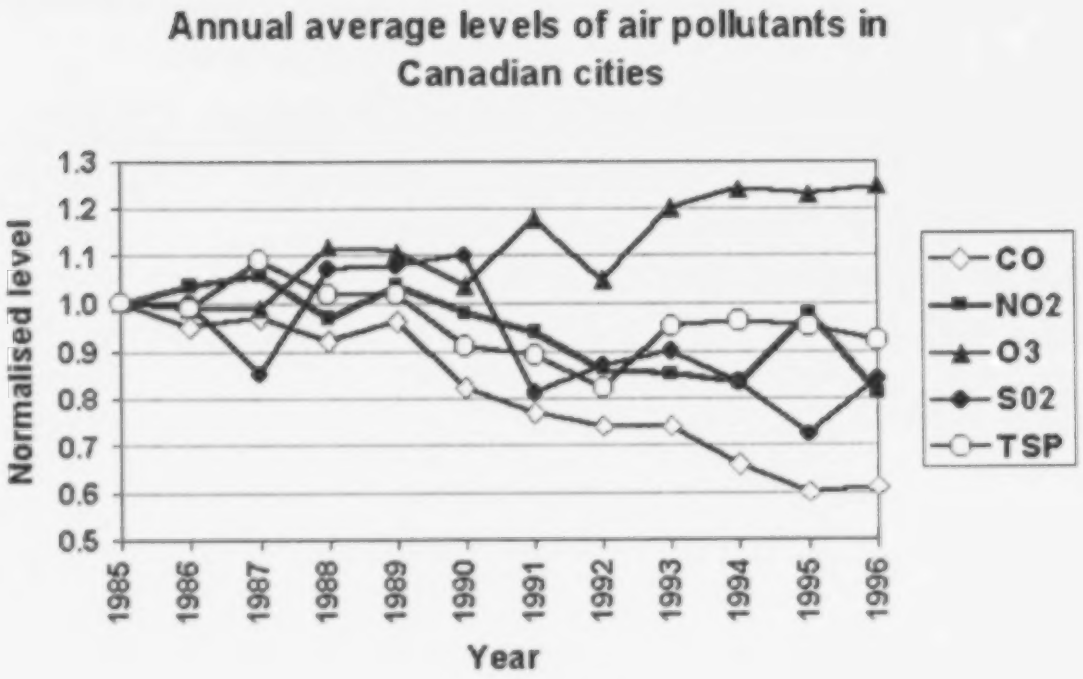

CCAF and Other Impacts and Adaptation Research Projects
# of Projects
25
20
15
10
5
0
Water Resources
Health
Communities
Agriculture
Forestry
Energy/Industry
Fisheries
Ecosystems
Integrated Regional Projects

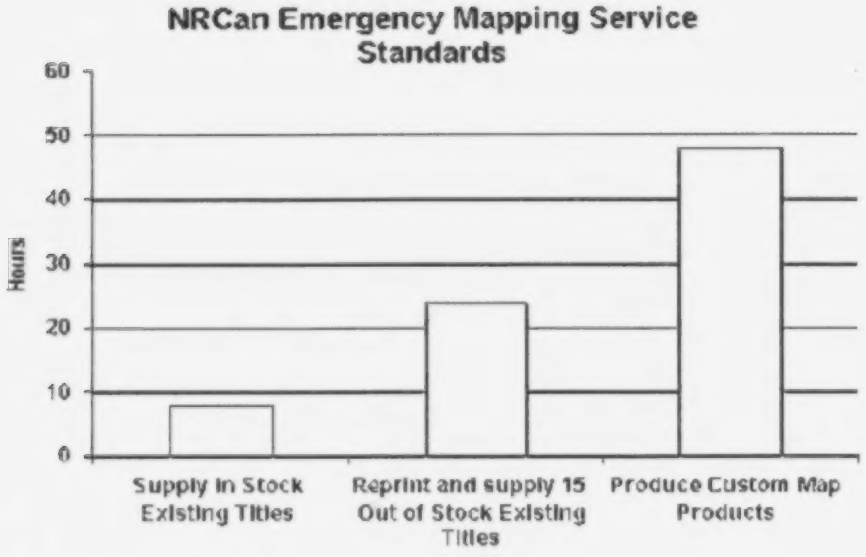
Greenhouse Gas (GHG) Emissions: History and Kyoto Target


Index of Carbon Dioxide (CO2) Emission per GDP (1990=1)
1.05
1
0.95
0.9
0.85
0.8
0.75
1990
1991
1992
1993
1994
1995
1996
1997
1998
Australia
Canada
France
Japan
United Kingdom
United States

Change in Energy Use due to Efficiency Gains




Annual average levels of air pollutants in Canadian cities
Normalised level
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
Year
CO
NO2
O3
S02
TSP


NRCan Emergency Mapping Service Standards
Hours
60
50
40
30
20
10
0
Supply in Stock Existing Titles
Reprint and supply 15 Out of Stock Existing Titles
Produce Custom Map Products

Goal 4 – Putting our House in Order

The federal government is Canada's largest single enterprise. The way that departments operate their facilities, manage fleets, dispose of wastes and purchase goods and services can significantly influence Canada's ability to advance sustainable development. NRCan committed to put environmental management systems in place and ensure that departmental operations uphold the principles of sustainable development.

The new Departmental Environmental Policy provides a detailed framework for that part of the sustainable development strategy that deals with the department's internal operations and decision-making processes. The policy incorporates and updates previous departmental policies on *Environmental Protection* and *Environmental Assessment* and reflects the most recent thinking on environmental management systems, including the Federal Government's *Directions on Greening Government Operations*, the International Organization for Standardization (ISO) standards on environmental management systems (the ISO 14000 series), and the *Federal Coordination Regulations* under the Canadian Environmental Assessment Act (CEAA).

NRCan also committed to promote eco-efficiency in its operations by purchasing green power. In 1998, NRCan entered into a ten-year agreement to purchase 10,000 MWh of wind-generated electricity annually from ENMAX, Calgary's electricity supplier. This agreement is intended to displace coal-based electricity with electricity from environmentally-friendlier sources for NRCan's facilities in Alberta.

OBJECTIVE 4.1 – Using leading edge environmental management tools and practices for NRCan operations

#	Target	Date target reported	How this target advances sustainable development	Future directions
4.1.1	By 2000, review and upgrade NRCan's Environmental Management System to be compatible with international standards (ie, ISO 14000 series).	Mar 31/01	Promotes the incorporation of sound environmental management practices and internationally accepted standards into NRCan operations.	NRCan will continually improve its environmental, health and safety performance by measuring key characteristics of activities and operations and adjusting programs and methods as needed, according to measurement results. For ***SDS - Now and for the Future***, NRCan has committed to develop and implement an environmental management system consistent with government-wide frameworks.
4.1.2	Distributing a Departmental Environmental Protection Guide on manager and employee best practices.	Mar 31/99	Improves accessibility and enhances understanding of information concerning Environmental Assessment and	NRCan will continue to improve environmental, health and safety compliance and awareness within the Department, and has

	Reviewing and updating *the Departmental* Environmental Policy, in 1998.	Mar 31/99	Protection Policies.	committed in ***SDS - Now and for the Future*** to update the Environmental Protection Guide by 2002. NRCan has committed to report on the implementation progress of the Departmental Environmental Policy (2000) by 2002.
4.1.3	By 1999, create a Web site to publicize the Department's environmental management system and prepare an environmental progress report.	Mar 31/99	Facilitates the communication of environmental data to NRCan employees and the general public.	NRCan remains committed to responsible management and continuous improvement. In this regard, NRCan has committed to provide stakeholders with access to its Sustainable Development Action Items Management System (SD-AIMS), a reporting system for sustainable development commitments, on the Internet. NRCan will provide up-to-date training and awareness tools to employees to demonstrate leadership and innovation in environmental, health, and safety responsibility. In particular, NRCan will conduct 10 sessions for staff on environmental, health and safety responsibilities by 2003.
	By 2000, measure the changes in employee environmental awareness.	Mar 31/01	Through ongoing participation in government-wide efforts, contributes to the development of awareness, standards and practices that promote environmentally responsible operations.	
4.1.4	By 1998, deliver NRCan's Environmental Assessment registry guide for electronic report form users.	Mar 31/99	Helps raise awareness of environmental assessment practices and regulatory obligations with the department.	The completion of the Manual by 2000 was delayed, pending the results of the Canadian Environmental Assessment Act Five Year Review. NRCan has committed to incorporate these results and update the Manual by 2002. Among other commitments to improve awareness within the Department, NRCan will conduct 10 sessions for staff on environmental,
	By 2000, review and update the Departmental Environmental Assessment Manual.	Mar 31/01	An up-to-date NRCan Environmental Assessment Manual will provide valuable assistance to NRCan employees when determining whether a project is subject to the Canadian Environmental Assessment Act.	

	Over the period from 1998 to 2000, conduct four training sessions on environmental responsibility awareness, four environmental assessment evaluations, and four environmental health and safety audits each year.	Mar 31/01	Promotes knowledge and awareness of environmental responsibility among NRCan staff. Promotes knowledge and awareness of environmental responsibility among NRCan staff.	health and safety responsibilities by 2003. NRCan will continue to measure the department's internal environmental, health and safety performance and has committed to conduct audits in selected organizational units by 2003, to verify that environmental, health and safety performance is improving over time.
4.1.5	By 1999, prepare Inventory of NRCan Programs and Activities Related to Aboriginal People.	Mar 31/99	Fosters co-operation and collaboration among Aboriginal groups by ensuring all stakeholders are able to be participate in NRCan activities.	In ***SDS - Now and for the Future***, NRCan has made a number of commitments to increase dialogue among Aboriginal communities, industry and governments, and to build capacity in aboriginal and rural communities. **Leadership and partnerships** have been identified as one of six key priority areas where NRCan can make a difference in ***SDS - Now and for the Future***. Action commitments to be undertaken in partnership with other organizations have been highlighted throughout the strategy.
	By 2000, complete an assessment of NRCan partnerships with Environmental Organizations to identify and promote best practices.	Mar 31/01	Improves partnerships through awareness and furthers efficient environmental management practice.	

OBJECTIVE 4.2 – Reducing wastes from NRCan operations.

#	Target	Date target reported	How this target advances sustainable development	Future directions
4.2.1	By 1998, work with Environment Canada and Industry Canada to promote the participation in the ARET program.	Mar 31/99	Accelerates the reduction/elimination of toxics.	Liv Vancea
4.2.2	By 2000, safely destroy all remaining Departmental PCB wastes.	Mar 31/99	Ensures that contamination of the environment does not occur.	In ***SDS - Now and for the Future***, NRCan will manage hazardous and non-hazardous waste produced by NRCan operations, to demonstrate that it is

				taking concrete steps to lessen the impacts of its internal operations on the environment.
4.2.3	Over the period of 1998 to 2000, survey one laboratory facility per year for wastewater compliance.	Mar 31/01	As a part of ongoing operations, verifying compliance helps protect the environment and promote best practices among NRCan employees.	NRCan has developed a methodological framework for conducting wastewater evaluations at key facilities. This framework will be used to verify, on an ongoing basis, NRCan's compliance with applicable waste water quality laws and regulations.
4.2.4	By 1999, evaluate and report on ozone depleting substances maintenance and performance.	Mar 31/00	Contributes to good environmental management practices and reduce potential emissions of ozone-depleting substances.	NRCan will continue to reduce its remaining inventory of ozone-depleting substances and verify compliance with applicable laws and regulations.
	By 1999, convert one of three remaining large halon- containing fire extinguishing systems to non-ozone depleting and non-global warming potential one	Mar 31/00	Proper disposal of NRCan's remaining halon-containing equipment is in line with current standards and best practices that are intended to protect the Earth's ozone layer.	
	By 2000, convert one of the six remaining large chiller system containing chlorofluorocarbons (CFC) to a non-ozone depleting potential system. This will reduce NRCan's CFC inventory to 1 tonne.	Mar 31/01		
	By 2000, dismantle and appropriately dispose of the two remaining large halon-containing fire extinguishing systems.	Mar 31/01		
4.2.5	By 1999, expand the employee-managed waste system from a pilot phase to full implementation at two larger facilities.	Mar 31/99	Reduces the amount of garbage sent to landfills, which reduces the production of greenhouse gases.	For ***SDS - Now and for the Future***, NRCan will maintain, expand and promote the department's waste-free program.

OBJECTIVE 4.3 – Increasing the efficiency of energy and other resource use in NRCan operations.

#	Target	Date target	How this target advances sustainable	Future directions

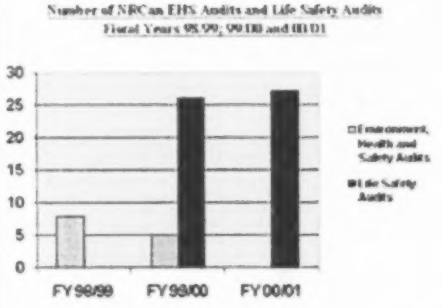
		reported	development	
4.3.1	Reduce the Departmental vehicle fleet size by 40 per cent from 1995 figures and ensure, where technically and operationally possible, that all new vehicles run on alternative transportation fuels, by 1998.	Mar 31/99	Reduces greenhouse gas emissions.	For ***SDS - Now and for the Future***, NRCan will develop and implement a revised Fleet Management Policy to increase the efficiency of internal operations, and will develop a strategy to promote alternative forms of transportation for Departmental staff.
4.3.2	Reduce Departmental energy consumption by 18 per cent over 1993-94 levels, by 2000.	Mar 31/00	Demonstrates leadership through the reduction of greenhouse gas emissions.	NRCan has committed to develop and implement strategies to increase the efficiency of energy and resource use in NRCan operations, to advance government-wide efforts to reduce consumption of primary resources and production of undesirable emissions such as greenhouse gases.
4.3.3	Reduce water consumption by 30% over 1994-95 levels, by 2000.	Mar 31/01	In addition to saving freshwater, an increasingly valuable resource, strategies to reduce water consumption in NRCan facilities also help to conserve the energy required for water treatment and distribution.	For ***SDS - Now and for the Future***, NRCan will develop and implement a water conservation strategy for the department, as part of efforts to increase the efficiency of internal operations.

OBJECTIVE 4.4 – Promoting the use of good and serves that are eco-efficient.

#	Target	Date target reported	How this target advances sustainable development	Future directions
4.4.1	Provide staff with new tools and training to promote green procurement of goods and services, during 1998.	Mar 31/99	Promotes sustainable development by providing employees with tools and information to procure environmentally friendly goods and services.	NRCan will participate in government-wide efforts to implement mechanisms for eco-efficient procurement, and as part of ***SDS - Now and for the Future***, will prepare a strategy to promote the use of eco-efficient goods and services within its own operations.
4.3.2	Purchase green power generated from renewable and alternative	Mar 31/99	Reduces greenhouse gas emissions and provides market opportunities for	In 1998, NRCan signed a ten- year agreement to purchase 10,000 MWh of

	energy, by 1998.		renewable energy technologies.	wind-generated electricity annually from ENMAX, Calgary's electricity supplier.This arrangement is intended to displace coal-based electricity with electricity from environmentally-friendlier sources for NRCan's facilities in Alberta. Beyond this commitment, NRCan has negotiated 10-year agreements on behalf of the Government of Canada for the production of about 50,000 MWh annually of wind-generated electricity for federal facilities in Saskatchewan and Prince Edward Island.

Goal 4, Objective 4.1
Progress towards the implementation of environmental health and safety audits and environmental assessment evaluations of NRCan operations. Reported in 2000-01. Under NRCan's current Performance Measurement Framework, this item is Goal 5, Objective 3.



NRCan's Contribution

• Natural Resources Canada is committed to verifying legal compliance in the areas of health and safety and the environment, within its own operations.

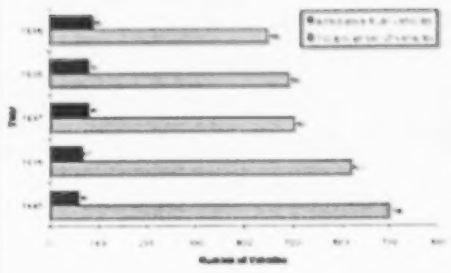
• Under its Occupational Health and Safety Policy, NRCan is committed to the well-being and safety of its employees and to the maintenance of a safe and healthy workplace. It is the policy of the department to comply with the Canada Labour Code, Part II and Treasury Board Secretariat policies, standards and procedures.

• Under its Departmental Environmental Policy, Natural Resources Canada is committed to assessing environmental impacts of past, present and future activities and to taking action to avoid, mitigate and remediate environmental impacts arising from such activities. In addition, the policy states that all activities will be carried out in a manner that meets or exceeds federal environmental laws, regulations and policies, and where appropriate will be compatible with municipal, provincial, national and international standards.

• Findings resulting from internal environment,

	health and safety audits have been addressed using a standard action plan / follow-up approach.
What Does the Graph Mean? • The environment, health and safety audits are part of an ongoing departmental program. Areas covered in these audits include: Atmospheric emissions management; Chemical handling, storage and management; Hazardous waste disposal and management; Water and wastewater management; Emergency prevention and response; Non- hazardous waste management; OSH management systems; Health and safety training; Laboratory safety and materials handling. • The graph indicates that 8 environment, health and safety audits were conducted during the 1998/1999 fiscal year, 5 during the 1999/2000 fiscal year and 0 in the 2000/2001 fiscal year. • This decrease in audit activity was due to a one-time due diligence initiative of life safety audits in the National Capital Region. The life safety audits consumed the departments capacity to undertake the health and safety audits that it had planned. • The life safety audits identified building and fire code deficiencies such as: improperly functioning fume hoods; lack of or inadequate fire protection in labs and plant space; asbestos and chemical contamination of work areas; fungus and moulds in science trailers; electrical system overloads; and malfunctioning elevators. • The graph indicates that 53 life safety audits were conducted between fiscal years 1999/2000 and 2000/2001.	**Next Steps** • To address the findings in the life safety audits, building/fire audit work plans were developed and high priority safety and health areas were immediately factored into the project planning and priority ranking process. • In the future, these and other high priority safety and health areas will be permanently incorporated in the Annual Building Management Planning exercise. • The Department will resume a full environment, health and safety auditing program beginning in 2001.

Goal 4, Objective 4.3 **Portion of fleet converted to alternative fuels. Reported in 1998. Under NRCan's current Performance Measurement Framework, this item is Goal 5, Objective 3.**	
	NRCan's Contribution Conventional fuel vehicles account for 22 per cent of all carbon dioxide emissions produced annually in Canada. The federal government's fleet inventory of 25,000 vehicles is one of the largest in Canada, consuming 2 per cent of all energy used for ground transportation.



• NRCan's Fleet Program is committed to reducing the number of Departmental vehicles through more efficient transportation strategies, such as pooling and sharing of fleet resources among federal departments.

• All new additions to NRCan's fleet inventory will operate on cleaner burning alternative fuels whenever possible. Over the last two years, this has translated into two-thirds of NRCan's purchases being alternative fuel vehicles.

What Does the Graph Mean?

• Since 1995, NRCan has reduced its vehicle fleet size from 700 vehicles to 448 vehicles. This is a reduction of 36 per cent over the five-year period.

• In addition, NRCan now has 90 vehicles (19 per cent of the fleet) that run on alternative fuels.

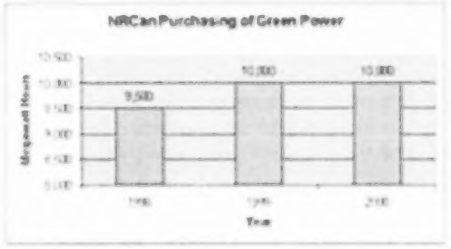
Next Steps

• NRCan will meet its overall 40 per cent reduction target by 31 March 2000.

• 50 per cent of NRCan's fleet inventory will be comprised of lower emissions, alternative fuel vehicles by 31 March 2001.

• NRCan will serve as a model for other fleet holders.

Goal 4, Objective 4.4
Rate of purchasing by NRCan of green power. Reported in 2000-01. Under NRCan's current Performance Measurement Framework, this item is Goal 5, Objective 3.



NRCan's Contribution

• NRCan purchases 10,000 MWh of wind-generated electricity annually from ENMAX, Calgary's electricity supplier.This 10-year agreement, which began in 1998, is intended to displace coal-based electricity with electricity from environmentally-friendlier sources for NRCan's facilities in Alberta.

• In 1998, 1999 and 2000, NRCan avoided about 27,000 tonnes of greenhouse gas emissions as a result of the green power purchases.

• ENMAX ensures that electricity has EcoLogo certification as an environmentally preferable source.

• NRCan was joined by Environment Canada in this pilot project and the latter purchases 2,000 MWh of green power annually and avoids about 1,800 tonnes of greenhouse gas emissions.

What Does the Graph Mean?

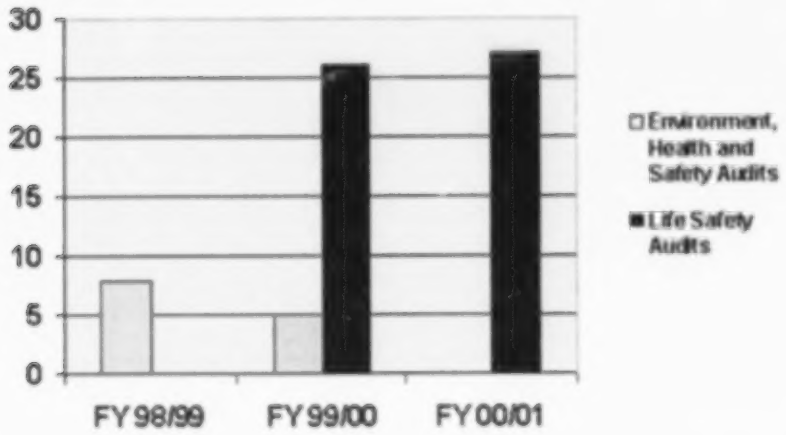
• In 1998, NRCan negotiated an agreement with ENMAX of Calgary to supply 10, 000

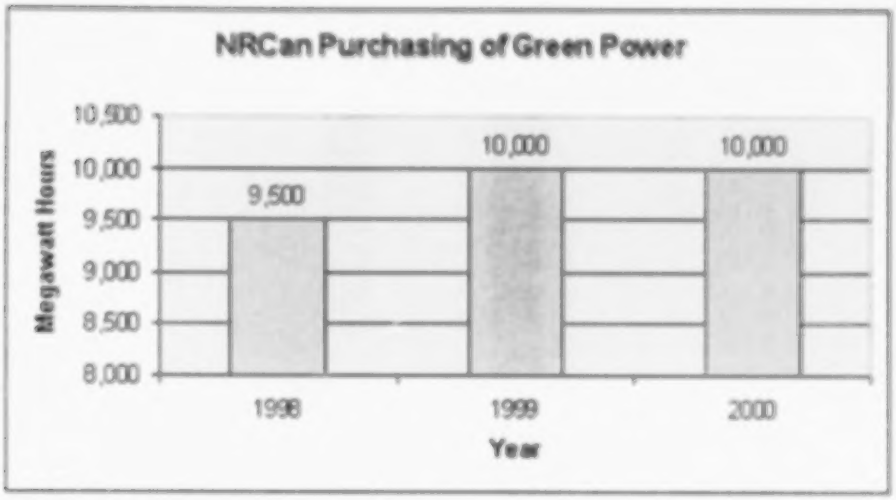
Next Steps

• NRCan has negotiated 10-year agreements on behalf of the Government of Canada for the

MWh (megawatt hours) of green power per year to NRCan's Alberta facilities. In 1998, ENMAX supplied 9,500 MWh while in 1999, and 2000, NRCan received the maximum 10,000 MWh. • The lower amount in 1998 was primarily due to the inability of one of the suppliers to provide the full amount requested.	production of about 50,000 MWh annually of wind-generated electricity for federal facilities in Saskatchewan and Prince Edward Island. • The GoC will begin receiving the electricity in these provinces towards the end of 2001. • Under Action Plan 2000, this initiative was further expanded to replace 20 percent of the Government of Canada's electricity purchases with electricity from emerging renewable sources. Electricity purchased will come from new or expanded generation capacity that has low environmental impact, as certified by a third party.

Number of NRCan EHS Audits and Life Safety Audits
Fiscal Years 98/99; 99/00 and 00/01




NRCan Purchasing of Green Power
Megawatt Hours
10,500
10,000
9,500
9,000
8,500
8,000
9,500
10,000
10,000
1998
1999
2000
Year

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The Path Forward – SDS Now and for the Future

Departments are required to table sustainable development strategies in Parliament every three years. At NRCan, preparations for the second sustainable development strategy began immediately after tabling the first.

During the three year period since Safeguarding our Assets, Securing our Future was launched, NRCan has:

- revisited and evaluated departmental goals and objectives;
- established time-bound, measurable targets;
- identified natural resource reliant communities, in order to establish a dialogue with representatives from these communities;
- consulted with stakeholders on a performance measurement framework;
- strengthened the Department's management system;
- reported to stakeholders and Parliamentarians on progress;
- conducted an internal review of the department's first SDS;
- evaluated changing circumstances that have influenced the development of the second SDS.

Central to these preparations has been an ongoing process of citizen engagement. Indeed, over the three-year period, a broad range of participants throughout the country have been involved in the process of implementing and developing the Sustainable Development Strategy, providing NRCan with valuable advice and information from each sector of society.

Review of Goals, Objectives and Targets

Early in 1998, senior management saw a gap in the performance measurement framework introduced in the first SDS. The Department's efforts to contribute to the safety and security of Canadians were not adequately integrated into the goals structure. In response to this gap, a new goal and associated objectives were developed in order to capture this important social dimension of sustainable development. As well, the department's performance measurement framework was amended to include these changes. In addition, draft performance indicators were developed to respond to the new goals and objectives while draft indicators for the existing goals and objectives were revisited. Following these revisions, the department consulted with stakeholders on the performance measurement framework, to arrive at a meaningful set of indicators that would effectively communicate progress and results. Performance indicators that were tabled over the period of SDS 1997 under the new performance measurement framework can be viewed here.

The Report of the Commissioner of Environment and Sustainable Development, in May 1998, recommended that departments establish clear targets to measure progress towards sustainable development. NRCan addressed this recommendation by establishing 125 time-bound, measurable targets for the 68 action commitments within the first SDS. In addition, targets responding to the performance measurement indicators were established.

Further to this recommendation, NRCan developed a Sustainable Development Action Items Management System (SD-AIMS) in 1999. This system is a Web-based tracking and reporting tool that has enabled the department to expedite reporting of progress and performance on Sustainable Development Strategy action commitments to senior management, staff and stakeholders.

A Continuing Dialogue with Stakeholders

In January 2000, a report entitled ***Sustainable Development: From Commitment to Action*** was distributed from the Minister of Natural Resources to the department's stakeholders, including industry, academic institutions, communities, environmental groups, other governments, aboriginal associations, Members of Parliament and Senators. A message from NRCan's Deputy Minister was sent to all NRCan employees to notify them of the document on the department's Web site.

This progress report was accompanied by a short questionnaire, ***Issues and Expectations***.

It intended to gain feedback on progress made to date on the first SDS, to understand the key issues and concerns of Canadians regarding the sustainable development of natural resources, and to gauge expectations for the Department's second SDS. The progress report and questionnaire were also made available on the sustainable development page of NRCan's Web site (http://www.nrcan.gc.ca/sd-dd).

We received a total of 105 responses to the questionnaire, by e-mail, fax and mail. Although over 80 percent of responses indicated that NRCan is meeting or exceeding expectations with respect to progress, a number of suggestions were made on ways to improve. The most common suggestion was the need for more detailed reporting of progress.

Also in January 2000, a presentation was made to NRCan's management committee on the progress made toward implementing the first SDS and the path forward for developing ***SDS – Now and for the Future***. The committee provided direction on areas of focus for the new strategy, including the need for an expanded focus on the social dimension of sustainable development.

An independent Advisory Panel composed of thirteen representative stakeholders was then assembled in the spring to review the results of ***Issues and Expectations*** and to provide guidance for preparing ***SDS – Now and for the Future***. This advisory panel identified specific areas where NRCan leadership is important, a number of domestic and international changes that have influenced the issues and approaches that NRCan should consider, themes to address in ***SDS – Now and for the Future***, and desired outcomes for 2003. The approach to ***SDS – Now and for the Future*** was then presented to key stakeholder groups, including the Minister's Advisory Council on Science and Technology and the Environment Committee of the Canadian Council for International Business, and other federal departments. This approach described the outline for the discussion paper, identifying the key areas for action that we would take as well as our plan to distribute the document and to meet with stakeholders, and then to develop the final document for tabling in Parliament.

Review of the 1997 Sustainable Development Strategy

In the spring of 2000, NRCan's Audit and Evaluation Branch conducted a review of the implementation status of the department's first SDS. The review concluded that NRCan has achieved much of what was committed to in the first SDS, and that the Department was well positioned to develop its successor.

However, the review identified five areas that would further enhance NRCan's ability to respond to its sustainable development goals:

- NRCan would benefit from complete reporting of progress made against all of its SDS commitments, by providing explanations in cases where commitments have not been

fully completed at the time of reporting, in addition to reporting on targets that have been met. The process for completing status or progress reports should also include clarification of the criteria used to determine whether commitments have been completed.

- NRCan should ensure that there is a framework in place to document the progress made against commitments, using consistent measurement criteria and documentation standards throughout the department.

- NRCan should ensure that officers responsible for implementation are identified for future SDS commitments, and that the SDS-related accountabilities are clear and accepted by these individuals. This includes ensuring that such accountabilities are transferred to other individuals subsequent to staff changes and that the accountabilities are clearly documented.

- In developing the second SDS, NRCan should ensure it integrates the lessons learned from this exercise. This exercise would help managers draw from experiences of the first SDS. In turn, this knowledge could help ensure an appropriate balance between achievability of commitments and the need to "push the envelope" in terms of the department's response to the goal of sustainable development.

- NRCan's electronic system for reporting on SDS commitments, SD-AIMS, should ensure that the system responds to users' requirements.

As continuous improvement is key to advancing sustainable development, these suggestions will strengthen NRCan's ability to implement the SDS. The recommendation to report on all commitments of the SDS in status or progress reports will be addressed through an upgrade to the department's Sustainable Development Action Items Management System (SD-AIMS).

We recognize the need to ensure consistent measurement standards and documentation, across all sectors, on the status of work against each commitment. We also recognize that individual sector coordinators and accountabilities could be more clearly documented. This will be addressed in the enhancement to SD-AIMS, and in the implementation of ***SDS – Now and for the Future***.

Gearing up for SDS – Now and for the Future – Discussion Paper and Consultations

In the Spring of 2000, NRCan took the preliminary input from ***Issues and Expectations*** and the Advisory Panel to develop a discussion paper that would be used to conduct further consultations with stakeholders. The department's Sustainable Development team reviewed the action commitments from the first SDS with a view to building on existing commitments.

In this regard, actions were analyzed to assess strategic opportunities for ***SDS – Now and for the Future***.

The Path Forward to SDS 2000 – A Discussion Paper was distributed from the Minister to NRCan stakeholders in August, 2000. The discussion paper proposed areas ***where*** NRCan could best make a difference, and laid out proposed actions that described ***how*** NRCan would make a difference. This enabled us to engage in a more complete discussion with our stakeholders – to determine what had really changed over the first three years, to propose actions that would address the most important sustainable development issues, and to evaluate these proposed actions with our stakeholders.

The discussion paper was accompanied by a short questionnaire, ***Actions and Expectations***, intended to gather input from stakeholders on the actions that NRCan proposes to undertake for ***SDS – Now and for the Future***. A message from NRCan's Deputy Minister was sent to all NRCan employees to encourage them to read the document and to participate in the development of the new SDS. A second Advisory Panel was held to review ***The Path Forward*** in advance of distribution.

In summer/fall 2000, consultations with external stakeholders were held in Calgary, Halifax and Ottawa to obtain input on ***The Path Forward*** and proposed actions. Individuals representing academic institutions, private companies, industry associations, non-government organizations, aboriginal groups, municipalities, and provincial and federal departments attended the three sessions. Consultations were also held with NRCan staff in Edmonton, Dartmouth and Ottawa. NRCan's sustainable development team met with other federal departments to identify proposed actions that may be undertaken jointly. As part of the consultation sessions, NRCan distributed the results of a review undertaken by the department's Audit and Evaluation Branch of the first Sustainable Development Strategy. The results of the consultations were published in a summary document entitled ***What You Said 2000*** and distributed to participants. The Advisory Panel reviewed the final draft ***SDS – Now and for the Future*** in January 2001 to provide input prior to the document being tabled in Parliament.

Progress Toward Sustainable Development in the North

NRCan has been an active participant in the development of a federal Northern Sustainable Development Strategy (NSDS), led by the Department of Indian Affairs and Northern Development. Representatives of Environment Canada, NRCan, INAC, Department of Foreign Affairs and International Trade, Department of Fisheries and Oceans, and Health Canada met with northerners in Whitehorse, Yellowknife and Iqaluit. These consultations gave these departments an opportunity to present their departmental sustainable development strategies, and to seek guidance on how to develop the NSDS.

The Path Forward

Sustainable Development Strategy - Now and for the Future was tabled in Parliament on February 14, 2001. The strategy is framed in the context of the department's vision for a sustainable future, followed by a framework for advancing the vision, and concludes with NRCan's commitment to measure progress toward the vision by developing and reporting on national indicators regarding the sustainable development of natural resources. ***SDS - Now and for the Future*** builds on the strengths and successes of NRCan's first strategy and aims to push the sustainable development agenda a little further.

The framework for advancing the vision includes strategic actions that focus on six themes: climate change; corporate stewardship and accountability; innovation; knowledge and information; leadership and partnerships; and sustainable communities. Each strategic action presents: the issue or problem NRCan will address; NRCan's leadership and partnership approach to addressing the issue; time-bound and measurable targets; and anticipated outcomes in the context of advancing sustainable development.

NRCan will report annually on its progress to stakeholders, and provide on-line access to the department's reporting system for sustainable development commitments on the department's Web site (www.nrcan.gc.ca/sd-dd).

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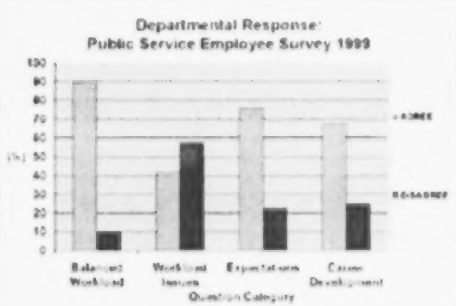
Additional indicators tabled in NRCan's annual Departmental Performance Report, under the current Performance Measurement Framework.

Goal 5, Objective 5.1
Employee satisfaction with NRCan management practices. Reported in 1999-2000.



NRCan's Contribution

• NRCan's primary goal was to use the Public Service Employee Survey to engage all employees in dialogue about their work environment.

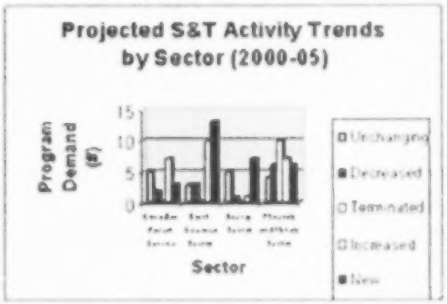
• This survey complements three NRCan upward feedback surveys.

• Since November 1999, issues requiring action at the departmental level were identified. The issues are: workload, harassment and discrimination, career development and fairness and cynicism.

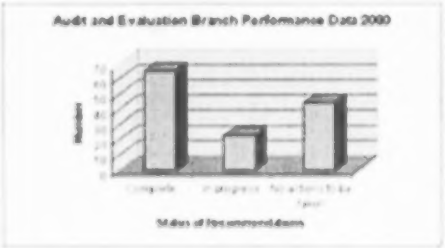
• NRCan's Deputy Minister is committed to sharing with his deputy ministerial colleagues, the work NRCan is doing in taking the Public Service Employee Survey from results into action. The Department's Public Service

	Employee Survey Champion is working closely with central agencies and other government departments to respond to the survey results requiring government wide support.
What Does the Graph Mean? • In 1999, the Public Service Employee Survey was conducted in all federal departments and agencies. The graph shown above illustrates NRCan's employee response to that survey: - Balanced Workload is based upon questions 5 and 10; - Workload Issues is based upon questions 11 to 17; - Expectations is based upon questions 23 to 29; - Career Development is based upon questions 36 and 37. • NRCan employees' response to Public Service Employee Survey questions about flexibility to balance personal, family and work needs, as well as their current work arrangements were overwhelmingly positive. • Responses to survey questions concerning workload highlighted that employees believe their quality of work suffered because of constantly changing priorities, lack of stability, and having to do more with less. In NRCan, only 50% of employees responded that they considered their workload reasonable, which is below the public service average of 56%. • Departmental employees generally agreed that they know what their supervisor expects of them in the job, that they are allowed to determine how the do	**Next Steps** • NRCan will develop and implement an Integrated Management Agenda (IMA) in response to the issues surrounding workload. An IMA would encompass priority-setting and allocation of resources, two areas cited by employees as impacting on their quality of work. • NRCan will continue to refine its "Guide to Good Management" to ensure the Department understands what are considered exemplary practices in all areas of management. Supervisors and managers throughout the Department will be encouraged to use this tool. • NRCan is committed to continued implementation of its five-year Retention, Rejuvenation and Recruitment (3R) Strategy. The 3R Strategy places career development and succession planning at the forefront, by providing employees with necessary tools to advance career path and development. • NRCan will continue to promote the benefits of alternative working arrangements to enhance employees' ability to balance their personal, family and work needs.

their job, and that they get feedback on their job performance. • While employees responded that they are allowed to take training for their job, only 54% of respondents agree that their immediate supervisor helps them to determine their learning needs.	

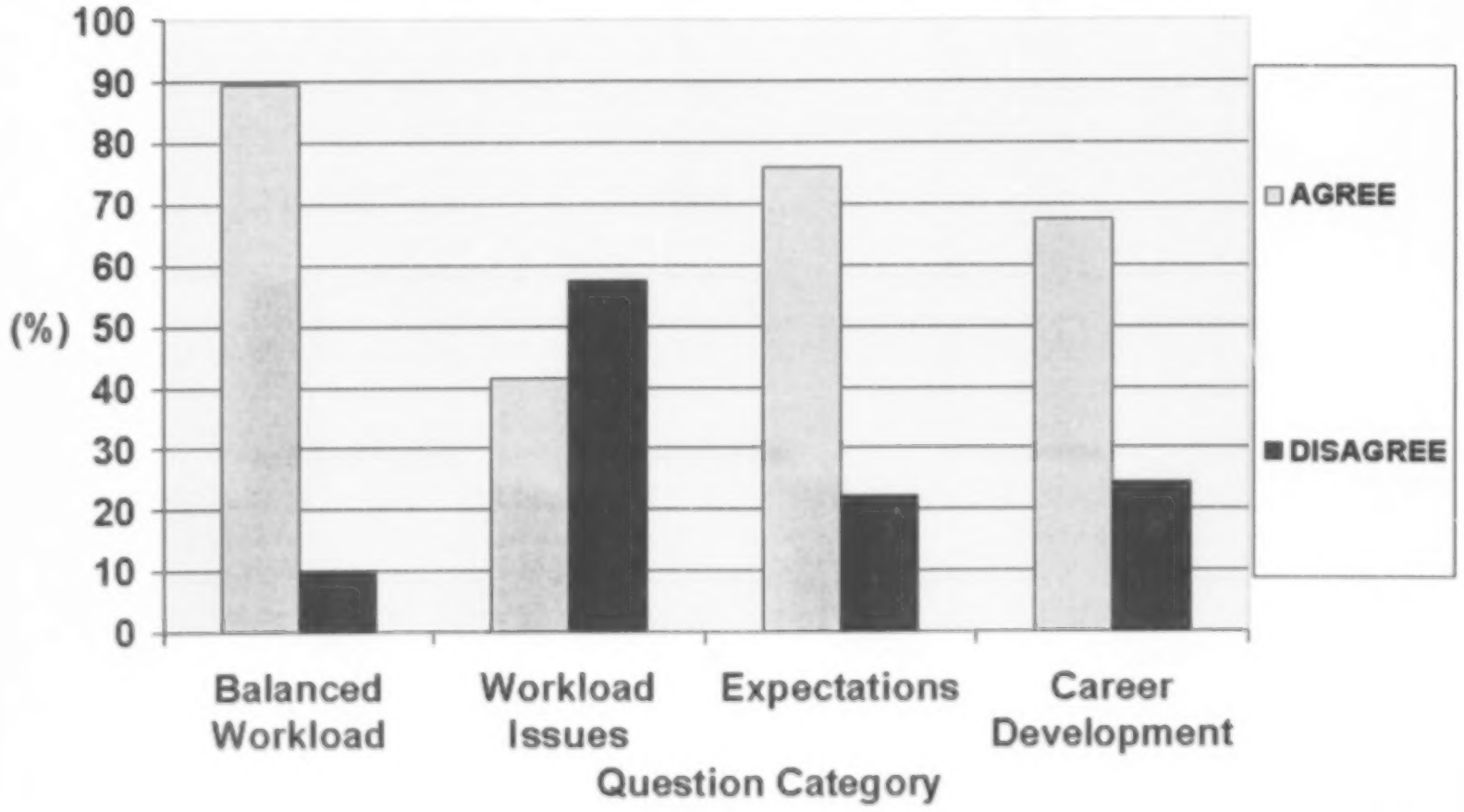
Goal 5, Objective 5.1 **Progress towards maintaining and enhancing NRCan's program integrity. Reported in 2000-01.**	
	**NRCan's Contribution** • As part of an assessment of its ability to deliver its S&T programs, both currently, and those expected over the next 5 years, NRCan identified and fully costed* its current and anticipated S&T capacity gaps. • This process required assessing anticipated levels of demand in all of its S&T program areas over the next 5 years. • Scenario building such as this process is intended to lead to more strategic investment of S&T resources in order to maintain the integrity and effectiveness of the Department's S&T activities. * i.e., including costing of requirements for accommodation, special space needs, IT/IM, HR support etc.
What Does the Graph Mean? • NRCan's Canadian Forest Service, Earth Sciences Sector, Energy Sector and	**Next Steps** • An extensive review and prioritisation of the Department's current and anticipated S&T

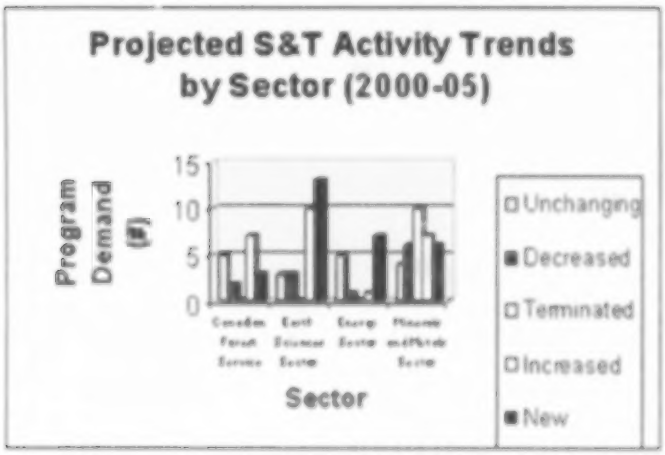
Minerals and Metals Sector were asked to identify anticipated levels of program demands over a five year period • The graph indicates levels of S&T program activity that is projected to remain unchanged, areas that will see activities decreased or terminated, and program areas that are expected to have an increase in activities or will be new to the department. • The graph indicates a bias towards an increase in present activities and new activities in each sector over the five year period.	gaps over the next five years will lead to the development of a long-term strategy to address the gaps. It will be aligned to other departmental initiatives, such the Long-Term Capital Plan (LTCP). • In the longer term, this process will better position the Department for early identification of , and adjustment for, emerging S&T capacity issues in the future.

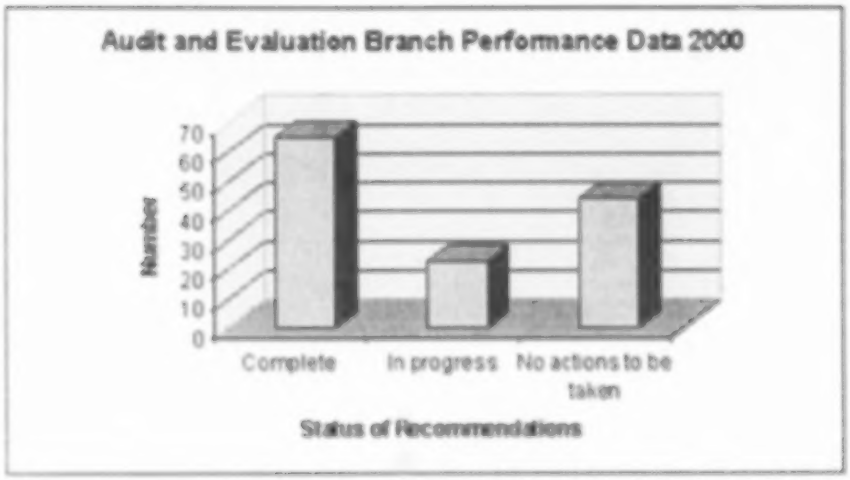
Goal 5, Objective 5.2 **Implementation of recommendations of audits, evaluations, and other studies of NRCan's management and operations. Reported in 2000-01.**	
	**NRCan's Contribution** • Delivery of programs and services is only part of NRCan's mission. Objective feedback on the quality, efficiency and effectiveness of service is also essential. Audit and Evaluation Branch (AEB) carries out audits, evaluations, risk assessments, performance studies, and a range of other services with departmental managers, other government departments and central agencies to help NRCan carry out its many programs. • Follow-up studies are performed to ensure that recommendations made by AEB and the Office of the Auditor General are implemented, thus ensuring good governance. This is also a measure of AEB efficacy.

What Does the Graph Mean?	Next Steps
• Results from audits, evaluations and other studies in the year 2000 made recommendations on 132 items that the department should address. The graph indicates that 65recommendations have been acted upon and been completed with an additional 23 recommendations in progress. • In total 66% of the Audit and Evaluation Branch's (AEB) recommendations have been or are being implemented; the remainder have not yet been acted upon to date. • The data presented above represents mostly audit results; given that most of the activities carried out by evaluation in the past year have focused primarily on activities that were not the subject of follow-up studies (e.g. development of Results- based Management and Accountability Frameworks).	• NRCan is revising its performance indicator to reflect its activities and programs more closely and to align better with the new federal audit and evaluation policies and will will improve upon it current performance. • NRCan is also applying for ISO 2000 and National Quality Institute certification, which require more rigorous follow-up of audits, evaluations and other types of studies. Thus future performance reporting will be based on more extensive performance information, including risk assessment, RMAF development, and other major AEB activities.

Departmental Response:
Public Service Employee Survey 1999




Projected S&T Activity Trends by Sector (2000-05)
Program Demand (#)
15
10
5
0
Sector
Unchanging
Decreased
Terminated
Increased
New


Audit and Evaluation Branch Performance Data 2000
Number
70
60
50
40
30
20
10
0
Complete
In progress
No actions to be taken
Status of Recommendations

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Measuring our Progress – NRCan's Performance Measurement Framework

NRCan has developed a Performance Measurement Framework (PMF) that articulates a clear set of goals, objectives and performance indicators. The performance indicators, which appeared in draft form in the 1997 Sustainable Development Strategy – Safeguarding our Assets, Securing our Future, have been further refined in consultation with our stakeholders. These indicators will help Canadians assess NRCan's progress in achieving its goals and objectives in the context of sustainable development and good governance and will provide the foundation for all Departmental planning and reporting documents. In this regard, the framework addresses reporting and performance requirements of the Department's Sustainable Development Strategy, the Federal S&T Strategy, and internal management practices.

NRCan showcased its distinct approach to reporting on performance indicators in the Departmental Performance Report (DPR), which was tabled in Parliament in October 1999. Each indicator – one for each of the Department's five goals – reported on four elements (i.e., graphic representation, interpretation of graph, description of NRCan's contribution and next steps) to communicate NRCan's story. The information included a mix of numerical targets, directional targets (i.e., to maintain or improve on existing performance),

Accountability at Three Levels

NRCan's work in promoting sustainable development can be assessed by stakeholders at three different levels.

At the most basic level, through regular reporting on action commitments, stakeholders will have a clear indication of whether the Department is meeting its commitments.

At the second level, through indicators and targets, NRCan's performance can be measured against the Strategy's objectives.

Finally, at a broader level, Canada's overall progress in the sustainable development of its natural resources can be assessed through indicators dealing with sustainable development practices

and trend analysis and monitoring (i.e., when it is too difficult to attribute the Department's contribution to a 'macro' indicator, even though the indicator is of high importance to NRCan).

in the areas of forest management, energy, and minerals and metals.

Building on the initial report of indicators, NRCan has prepared a schedule for reporting over the next three years. The following table presents NRCan's Performance Measurement Framework and also identifies a reporting date for each performance indicator – for publication and tabling in Parliament of NRCan's Departmental Performance Report. The schedule for reporting will inform Canadians of the time frame for assessing the Department's progress in achieving its goals and objectives through the use of specific indicators.

Goal 1:
To provide Canadians with information to make balanced decisions regarding natural resources.

OBJECTIVES As demonstrated by:	PERFORMANCE INDICATORS	TARGETS AND APPROACHES	TABLING DATE*
1.1 Easily accessible and integrated knowledge on the state of Canada's landmass and natural resources, and the economic, environmental, and social dimensions of their use.	1.1.1 User satisfaction with relevance, accessibility and quality of information.	Maintain or improve current levels of use and satisfaction.	2001
	1.1.2 Public awareness of the importance and relevance of the natural resource sectors, its issues, and NRCan's S&T.	Maintain or improve awareness.	2001
	1.1.3 Adoption of NRCan-supported technology and practices.	Not applicable.	2002
1.2 Greater national and international cooperation and consensus on sustainable development issues, policies, goals and actions.	1.2.1 Participation in, and influence on, national and international multi-stakeholder approaches to SD issues.	Maintain or improve participation and influence.	2001

	1.2.2 Degree of leveraging by NRCan from shared S&T projects.	Maintain or improve total funds and in-kind support leveraged.	2001
1.3 Fiscal, regulatory and voluntary approaches that encourage the sustainable development of natural resources. strated by:	1.3.1 Participation in, and influence on, fiscal, regulatory and voluntary sustainable development initiatives.	Maintain or improve participation and influence.	2002
	1.3.2 Influence of NRCan's S&T-based recommendations on regulatory regimes.	Not applicable.	2003

Goal 2:
To provide Canadians with sustainable economic, social and environmental benefits derived from natural resources for present and future generations.

OBJECTIVES As demonstrated by:	PERFORMANCE INDICATORS	TARGETS AND APPROACHES	TABLING DATE*
2.1 Greater economic opportunities and encouraging investment in innovative and higher-value uses of natural resources.	2.1.1 Economic influence of NRCan S&T.	Trend analysis and monitoring.	2002
	2.1.2 Employment levels and productivity in resource and resource-related industries.	Trend analysis and monitoring.	2001
	2.1.3 Contribution of the natural resource sector to the GDP.	Trend analysis and monitoring.	2001
	2.1.4 Capital investment in resource and resource-related industries.	Trend analysis and monitoring.	2002
2.2 Expanded access to international markets for	2.2.1 Value and percent of exports of resource-	Trend analysis and monitoring.	2003

Canadian resource-based products, knowledge, technologies and services.	based products.		
2.3 Increased capacity of communities to generate sustainable economic activity based on natural resources.	2.3.1 Number of shared projects and funds leveraged with rural, Aboriginal and northern communities.	Trend analysis and monitoring.	2001
	2.3.2 Employment level of Aboriginal peoples and northern residents in resource sectors.	Trend analysis and monitoring.	2003

Goal 3:
To provide Canadians with strategies that reduce environmental impacts in the natural resources sector.

OBJECTIVES As demonstrated by:	PERFORMANCE INDICATORS	TARGETS AND APPROACHES	TABLING DATE*
3.1 Canada addressing its international Kyoto commitment to reduce greenhouse gases.	3.1.1 a) GHG emissions compared to Kyoto protocol b) GHG emissions to GDP ratio compared to other countries.	Canada's Kyoto protocol target is to reduce GHG emissions to 6% below the 1990 level between the years 2008 and 2012.	2001
	3.1.2 Trends in use of renewable energy.	Trend analysis and monitoring.	2002
	3.1.3 Trends in energy efficiency.	After the energy efficiency index has been developed a desired directional target will be stated and a quantitative target will be considered.	2001
	3.1.4 GHG emissions	By the year 2005, reduce	2003

	from federal operations.	GHG emissions from federal operations by 20% below 1990 levels.	
	3.1.5 Progress towards the identification of impacts and adaptation measures.	To be determined.	2001
3.2 Science, technology and stewardship practices that reduce environmental impacts, conserve biodiversity, and increase the efficiency of resource development and use.	3.2.1 Environmental influence of NRCan's science, technology and stewardship practices.	Maintain or improve NRCan's influence.	2001
3.3 Canada's environment safeguarded from the risks associated with natural resource development and use.	3.3.1 Progress towards addressing hazards associated with resource development and use.	Maintain or improve safeguards – hazard specific.	2002

Goal 4:
To provide Canadians with safety and security in the natural resources sector.

OBJECTIVES As demonstrated by:	PERFORMANCE INDICATORS	TARGETS AND APPROACHES	TABLING DATE*
4.1 Canadians safeguarded from natural hazards.	4.1.1 Impact of NRCan's S&T on the identification, mitigation and response to natural hazards.	Hazard specific.	2001
4.2 A national framework for spatial positioning, mapping and boundary maintenance.	4.2.1 User satisfaction with aeronautical charts, the Canada Lands Survey System and the Canadian Spatial Reference System.	Service standards exist in all 3 areas. Meet cycle deadlines 100% of the time.	2001

		Maintain standards.	
4.3 Safe use of explosives and pyrotechnics.	4.3.1 Accident and incident rate in the explosives and pyrotechnic industries in Canada.	Zero accidents, no incidents.	2002
4.4 Enhanced safety and security in Canada's natural resource sector.	4.4.1 Impact of regulatory frameworks for energy transmission, offshore development, and Canada's uranium and nuclear industry.	Improvements to regulations and guidelines.	2003

Goal 5:
To provide Canadians with a department that is efficiently and effectively managed.

OBJECTIVES As demonstrated by:	PERFORMANCE INDICATORS	TARGETS AND APPROACHES	TABLING DATE*
5.1 Managing NRCan's resources responsibly.	5.1.1 Employee satisfaction with NRCan management practices.	Trend monitoring and analysis with corrective action as necessary.	2001
	5.1.2 Progress towards maintaining and enhancing NRCan's Program Integrity.	To be determined.	2001
	5.1.3 Savings realized from streamlining administrative processes, innovative service delivery, electronic commerce, improved facilities management, and information technology bulk purchasing and contracts.	To be determined on a project-by-project basis.	2003
5.2 Continuously improving NRCan	5.2.1 Implementation of recommendations from	To be determined.	2001

products, services, and operations.	audits, evaluations, and other studies of NRCan management and operations.		
	5.2.2 Progress towards the implementation of leading-edge management practices.	Sector specific.	2003
5.3 Sustainable development in NRCan operations	5.3.1 Progress of the Department's Environmental Management System (EMS) towards the implementation of ISO 14000 series of standards.	By 2000, NRCan will be compatible with the ISO 14000 series of standards.	2003
	5.3.2 Progress towards the implementation of environmental health and safety audits and environmental assessment evaluation of NRCan operations.	100% implementation with action items stemming from findings of audit and evaluations.	2001
	5.3.3 Amount of solid non-hazardous waste from NRCan operations per capita per year.	By 2000, 50% reduction in solid non-hazardous waste from level measured in 1995-96 audits.	2002
	5.3.4 Portion of fleet converted to alternative fuels.	By 2004, 75% of fleet converted to alternative fuels where technically and operationally feasible.	2002
	5.3.5 Rate of purchasing by NRCan of green power.	10,000 MWH of power purchased per annum.	2001

** Tabling data indicates the year that the indicator will be reported in the Departmental Performance Report to Parliament.*